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Date 18-12-95

TO OUR CONTRIBUTORS

JIE Invites Articles/papers on the impact of educational research on classroom practices, and policy decisions. Specific examples where this impact is apparent may be given.

GENERAL EDITOR

Educational Journalism

WAY back in 1981 when we started to grapple with the problem of defining 'educational journalism', we found what appeared to be a very simple exercise was really not so. A whole national seminar had to make concerted efforts with only a modicum of success. Since then numerous steps have been taken and we are now face to face with specialisation in an area where perhaps none was needed. The question of print media alone does not bother us. The visual media has literally taken over the print media. Obviously we cannot think of educational journalism in terms of print media alone. As pointed out earlier, we have moved much ahead from the stage when definitions would have solved our problem.

In the present issue we have come to our readers with papers like 'On Being an Educational Journalist', 'The Essentials of Educational Reporting', 'The Art and Craft of Book Review', etc In our opinion educational journalism is now being accepted as an optional area of specialization in schools of journalism in India. A need, therefore, seems to exist that one ought to know at least the parameters of this emerging area.

We are happy to report that in another two years' time the Journals Cell of the National Council of Educational Research and Training shall be celebrating its 20th birthday. Considering that we are the only people in the area of educational journals who cater to the varying needs of our clientele through our six journals, we feel so lonely and non-competitive. Our achievements thus become exercises in isolation. While we can do nothing to change the situation, we can still hope to offer the best our authors can contribute. The contribution of this Cell for the promotion of the cause of educational journalism will be testified in future when the geneology of the roots of the concept are getting traced.

R.P. SINGH

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Perspectives of Educational Journalism

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THE word 'journalism' has been used in such a narrow sense that it has almost acquired a mysteriousness which keeps away ordinary people at the distance of merely enjoying it instead of involving themselves in it. But this is rather strange, considering how inextricably is our day-to-day life connected with some aspect of journalism. The printed word — newspapers, advertisements, instructions, catalogues, notices, etc. — has come to be our channel of communication which ensures that we have an active role to play in our society and yet those who actually manage and manipulate the printed word are the chosen few. Even in the educational system where the written word forms the basis of the evaluative procedure, it is kept at the perfunctory level of being used to convey predictable answers to questions. Very rarely has the power of the written word been fully utilised in testing the mental calibre of the learner Such a monopoly of the means of communication — the written mode — in the hands of a few who can xcel in producing unexpected and unconventional lourishes of language has deprived the genre 'journalism' of its multifarious forms and uses In st journalism was associated with the sensational esentation of facts bordering almost on creative literature. Is this true now?

Journalism is the enterprise of publishing a current account of current events. While all journalists have this end in common, they differ considerably in their approach to access, in the point of view and in the audience they are addressing. These variations have led to the establishment of a number of types of journalism, liberal journalism, adversary journalism and literary journalism. Partisan journalism, represented by the traditional journal of opinion, rather than the newspaper, has an explicit political point of view. It propagates an ideology and aims at an audience that shares its point of view. Its object is to interpret public affairs from within that point of view and it gathers information for the specific purpose of supporting such an interpretation.

By contrast, liberal journalism is characterized by a concern for facts and events as such and avoids an explicitly ideological point of view. It aims at an universal audience on the basis of its non-political, objective point of view and is committed to finding and reporting only facts as opposed to opinion. In order to find as many events and as much information as it can, it goes to "sources", i.e. persons and organizations directly involved in the events, and relies on them for the validation of such information. Since access to information is its main goal, it aims to present unambiguously true information about as many events as possible. In this tradition, newsmen see themselves as authentic ringside observers of men and events.

Adversary journalism or investigative journalism carries the image of the newsmen as 'watchdogs' of government to the extreme position of complete independence and defiance of the government. Though many people consider the type of autonomous, investigative, adversary press as a myth, it does have its salutary effect on the newsmen. When the newsmen believe and act on this romantic notion of who they are and what they do, the likelihood of their becoming mere uncritical puppets in the hands of their sources is diminished.

Literary journalists unite the realm of the fiction writer which brings us inside the lives of our neighbours and that of the non-fiction reporter which gives us news from far-off centres of power that hardly touch our lives Reporting on the lives of people at work, in love, going about the normal rounds of life, they confirm that the crucial moments of every-day life contain great drama and substance. Unlike standard journalism, literary journalism demands immersion in complex, difficult subjects. Whether the subject is a surgeon in the operating room or a computer design team, the dramatic details yield only to persistent, competent, sympathetic reporters. This type of journalism started by George Orwell, Lillian Ross and Joseph Mitchell is carried on now by John McPhee (Travels in Georgia, Basin and Range, In Suspect Terrain and Coming into the Country) Mark Kramer (Invasive Procedures, Three Farms· Making Milk, Meat and Money from the American Soil), Tracy Kidder (The Sould of a New Machine), Mark Singer (The Super Americans) and Francis Parkman (The Oregon Trail). Reacting to the commonly held view that one cannot present facts in an interesting manner without tainting them, these literary journalists showed that one can have a powerful story line and a powerful 'voice', more recognisable as a real world than the "facts only" variety of reporting Standard reporting presupposes less subtle cause and effect, built upon the events reported rather than on an understanding of every-day life. The literary journalists, on the other hand, worked on the assumption that understanding begins with emotional connection but quickly leads to immersion.

These four patterns of journalism reveal a growth in the visibility, self-consciousness and self-confidence of the journalistic profession. These also show the variant forms in which information has been disseminated to the public. The stance of a journalist ultimately depends on the management of information which is of crucial importance to the development of the individual and the nation.

Today's world has been characterized as the information society and there is a growing awareness of the importance of the knowledge workers who will be changing the pattern of work in our society Today the actual production, extraction or growing of things utilizes less than a quarter of our human resources The rest are involved in what can be called "knowledge" services. A century ago less than 10 per cent Westerners were doing information work; now more than 50 per cent are engaged in it. According to two French Government experts Simon Nora and Alain Minc, its information sector in 1983 was 45 per cent of the labour force. Agricultural economist G. Edward Schuh claims that "all of the increase in agricultural output from the mid-1920's through the mid-1970's came about with no increase in the capital stock of physical resources. It was all due to increase in productivity, with most of that due to new knowledge or information". The concept is not new, since it is based on the "human capital" school of economics advocated by Adam Smith and Alfred Marshall. Yet it shows the trend in the present age which cannot be ignored. This does not mean that a society in which information is the dominant resource is necessarily better or worse than a society based on agricultural or industrial resources. Mere possession of information does not ensure its usefulness, quality and relevance. These depend on who uses it, in what form and for what purpose.

Peter Drucker considers knowledge in the information age as "the Central Capital, the cost center and the crucial resource of the economy". According to Harlan Cleveland :

> Information is the ore, the sum total of all the facts and ideas, accessible or not, that are available to be known by somebody at a given moment. Knowledge is the result of somebody applying the refiner's fire to the mass of facts and ideas, selecting and organizing what is useful to somebody . . .. Wisdom is integrated knowledge-information made particularly useful by creating theory rooted in disciplined knowledge but crossing disciplinary lines ("Information as Resource", The American Review, Autumn 1983, pp. 51-55).

Whereas information is horizontal, knowledge is structured. Any diligent student can with the help of a computerized system acquire vast amounts of information. But the data will be useless because these will be just items structured out horizontally. For this data to be useful, they have to be linked to another level or category and seen as part of a system. The result is knowledge. Every teacher knows how difficult it is to pass on to students knowledge as distinct from information. Objective tests are usually used to determine how much information learners have acquired and essays and projects work for measuring knowledge. Under these circumstances, education, even when it is blatantly job-oriented, has to be based on imparting knowledge which will eventually lead one to wisdom.

The common ground between education and journalism is the enterprise of structuring information. While the ends may be different, the means used share a common core which made visible, will be beneficial to students. The awareness of learning through writing as being different from using writing to display learning will make education process-oriented. Just as the journalist discovers new horizons while working on the facts of reality the student too will be enlightened by considering the different possibilities of looking at the data available in various disciplines. In education the information environment places a much greater premium on integrative thought, educated intuition and ethical hunch.

Educational journalism is another type of journalism like partisan journalism, liberal journalism and literary journalism. The name "academic writing" has been in use for quite sometime in many British and American universities. The need to teach the structure of academic writing can be understood from such specific courses as "English for Academic Purposes" (EAP) being given in the British Universities to its overseas students. However, the notion of academic writing smacks too much of the examination system which brings with preconceived notions and prejudices to be of benefit to the learner. Since academic writing has been narrowed to confirming what has been learnt the benefits of the writing process have not been fully exploited for its educational value. But it is true that the successful one in class as well as in life is not the one who repeats information but uses it to acquire knowledge and this is usually facilitated as well as exhibited by one's power of expression in writing. On the other hand, the term "educational journalism" has a wider connotation and releases the mind from thinking of writing as a burden to something pleasurable, voluntarily attempted by the learner. Though ultimately it does deal with writing for academic purposes, the environment of the journal rather than that of the examination,'in which it is placed, gives the learner a sense of freedom to try and attempt a new point of view, even an unconventional one, and struggle hard to maintain it. Even if the attempt is not very successful, the endeavour will have been satisfying to the learner intellectually, because certain mental structures having been activated will keep alive the proposition and sharpen his perceptions But when the learner is rewarded by seeing his views in print, then the joy of achievement, of being accepted in a community of fellow thinkers, will be very influential in the growth of an individual into a human person.

Educational journalism emphasises how the educational process can be enhanced through focussing the attention of the learners on the salient features of journalism viz. — accuracy, objectivity voice, structure, immersion and responsibility. Understanding improves through communication and writing structures communication. To be able to see how one progresses from one stage to another or works out various possibilities for getting out of tangles is in itself educative, for it gives to the learner the much valued experience of respecting the diverse points of view on a particular issue. Among other things, writing is an act of self-clarification, which is presented in a structured manner so that it is easy for the reader to enter into the world of the writer. Commenting on the inter-relationship between writing and education, Ronald White says.

> In one sense I know what I have to write, just as the student faced with an assignment knows, sometimes in quite specific terms, what is required. And yet it is only by engaging in the process of writing itself that writers ultimately discover what it is that they want to say Indeed, the final product may be a surprise Similarly, education should arrive at unpredicted destinations. Thus, it would seem, that both writing and learning are acts of discovery and that writing is potentially a powerful educational tool. ("Academic Writing Process and Product", *Academic Writing, Process and Product*, ELT Document 129, The British Council, 1988, pp. 1-15)

Writing is essentially a thinking process and the words on the page are not to be considered as merely a representation in the written mode what was decided in the mental process. These are not static. They are capable of giving rise to other ideas which may develop the idea suggested or may even change the course of the flow of thought Therefore, it is a highly recursive process and not linear. Views such as "writing is rewriting" and "successful papers are not written; they are rewritten" popular in the field of teaching writing, only confirm the nature of the writing process

The teaching of writing should be concerned with what the learner wants to say The learner's intention or purpose becomes the major concern and the learner is seen to have a role as initiator and not as a reporter or imitator of other people's views and intention. When this role of the learner is respected, the learner will begin to possess his writing and nourish it. Otherwise the writing will be done in a perfunctory way which destroys all the possibilities afforded by the experience of writing to the growth of the human person Instead of dismissing a piece of writing as right or worng, good or bad, it can be shown to have a certain point of view, a bias or tone which may offer useful feedback to the writer for editing his work Editing is a constant process It is an attempt at finding the form or shape of one's argument which changes according to the nature and expectations of the audience to which it is to be presented. These changes are in the voice, and structure of the writing rather than in its essential stance.

This process of editing or revision is an integral part of the writing process and not just an appendage. It is concerned with turning a writer-based prose to reader-based prose. Usually the first draft is writer-based being egocentric. The ideas will be enclosed according to the mental map of the writer and not that of the reader. As it is, it may not make sense to the reader, — the target audience of the writer—and so the writer will have to revise his presentation by considering how the reader is to be affected by what is written By several stages the writers learn to distance themselves from what they have written, especially when there is an interval between drafting and revising. Donald Murray says, "the writer is constantly learning from the writing what it intends to say" (A Writer Teaches Writing: A Practical Method of Teachig Composition, Houghton Mifflin, 1968, p.2) Such reading involves criticism of one's writing from all levels — from global goals to local problems such as the choice of words and syntax. Depending on their purpose and audience, the writers may have to change directions, even abandon earlier ideas, reformulate the problem or discover new ones. In this sense revision is highly dynamic encompassing different levels and is recursive.

In writing structure matters very much. It is the structural design that gives order, balance and unity— the elements that relate the parts to each other and to the whole. Richard Rhodes feels that the structures that one has to build are the ones that nobody talks about or teaches and they have little to do with verbal abilities. They have to do with "pattern ability and administrative ability—generalship, if you will". Structure has more work to do than merely to organize. It concerns the decision of the writer to juxtapose the part which creates the form and the shape of the thing.

These aspects of the writing process which highlight the initiative and the negotiating capacities of the learners are of fundamental relevance to educational journalism. The processes involved including the false starts, rejections and modifications sharpen the sensibility of the writer and widen his perspective of the world.

The strategies for teaching educational journalism are basically the same as for teaching written composition:

1 (a) Identification of the purpose or intention
  (b) Find manageable sub-goals

2 (a) Brainstorming
  (b) Dialogue
  (c) Different points of view :
    describe, compare, associate, apply, argue for or against, different points of view, use a different vocabulary.

3 (a) Find a crucial idea/word which stands at the centre of the network of ideas
  (b) Nutshell your ideas by reducing them to two or three sentences
  (c) Draw a Tree diagram of the outline of your material
  (d) Test your own writing against your own evaluation

The more important thing to consider is the context in which educational journalism will be providing real-life experience to the learner. Given the Indian context where adademic journals are few, it will be unhelpful to merely say that these learners have to imagine that they are going to publish in standard journals. On the other hand, every department can think of a publication/journal brought out at a low cost and using low technology (cyclostyled material) to provide real space for publishing one's point of view. An editorial board can be constituted which will give its reason for accepting or rejecting a submission. These can be discussed in the class. Each student should be asked to publish atleast one article during the year. Even before submitting the article to the Editorial Board, peer interaction can be arranged in the class for helping with each other's presentation. The best presentation may be sent to a standard journal.

By way of sensitising the learners to the finer aspects of voice, audience and structure, articles published in standard journals may be discussed from these angles and the learners be asked to see for themselves the changes that may occur when these are changed.

Educational journalism is not a mere training to do a particular thing. Such an attitude will be too narrow to serve the purposes of education. It should capture the essence of education — be a system in which the aims lead to goals. It is the creation of an environment which will facilitate the growth of an individual.

Innovation: Key to Educational Journalism

Patanjali Sethi
The Times of India, Bombay

In some ways, the style of working of educational journlists is no different from other newsmen. They seek information, chase it whenever and howsoever required, comprehend it themselves, and supply it without difficulty. However, they have an added responsibility: to present news and other material in a form and style which provokes thinking, obtains response and broadens the readers' minds. This is not easy, as there is inbuilt resistance to accept new thoughts and change. Moreover, not all subjects can respond to the treatment required In any case, many subjects do not fall within the purview of their specialised area of coverage. Even those that do, present difficulties. For instance, journalists writing on education have a variety of problems. Although they generally use the methods and procedures of other newsmen, they often have to deal with common place and run-of-the-mill routine material. They run the risk of being repetitive. This is because many things happen in the same set pattern Therefore, the educational news becomes standardized.

In order to avoid this, they must innovate interesting slants,work out readable styles. There always is background matter to be investigated and presented in new styles of features. When a journalist learns to dig behind the outward facts, he can find the unusual, the so-called "unknown" details. Then there is also the human element to every thing. With ingenuity, they can "reach" the audience their publication is slanted for. Simultaneously, they are meeting the demands of their specialised society. Educational journalists can meet the demands placed on them only through innovation in terms of ideas and style.

Informing and educating go together. Even specialised publications, like those for farmers, can serve an essential purpose. In the US, for instance, farm publications are read not only by farmers, but also their wives and children. They have contributed in informing and educating their readers. Innovation ia not just "being entirely new" or having new ideas. If that were so, one would feel safe in building up an Ideas Bank so that he could dip his hand into it and pull out a host of suggestions. These he could relate to the latest educational material he is working on — and triumphantly produce journalistic work welcome by readers

Innovation is said to bring in novelty, make changes. In reality, it relates to vigour and vitality in writing and presentation style. It is identified with bold and animated use of available facts and conclusions. In tackling the same problem in an uncommon way, one can bring in freshness, immediate decency, uniqueness and originality. The process of innovation relates to transformation, not metamorphosis; it may require transmutation of ideas, not translocation. It can even be futuristic, and in its futurism it relates more to the youth who are our future than to the older ones who belong to today. At the same time, there is use of accommodative discretion, free from tight rules and styles.

A newspaper in competition with a powerful rival tried innovation successfuly. A sensational murder case was being reported. A lesser known publication on the verge of closing down got the relatives of the accused and the victim interviewed. This had never been done before by any newspaper. Every day a new human interest feature based on the interviews appeared, creating clamour for the next day's issue. The older, better established publication began to lose its circulation. It never recovered.

Another aspect. Getting over the "routine stuff" by in-depth comprehension helps. What is usually routine need not always be so. Whereas, journalism about institutions like schools and colleges, courses of study, scholarships, policies, admission, etc. is routine, an enterprising journalist can delve into other aspects of education. According to Curtis D. Macdougall, educational news requires the attention of journalists with specialised knowledge and understanding. "It is a great field for the interpretative reporter."

No happening exists all by itself, in solitary splendour. A labour strike does not just mean the downing of tools by workers. There is some background to it, the circumstances in which it took place. Sometimes, even the general mass of strikers themselves do not know the whole story. Or, when there is trouble at the university senate meetig, just that is reported. The simmering rivalries that caused it never come to light. The information is incomplete unless the total situation is explained.

Therefore, the enterprising reporter inquires and investigates. He studies the background and gathers all the details he can. The material he gives after this is considered interpretative, innovative. But, is it a part of the newspaper's duty to supply all this? Does such interpretation not lead to opinion? Not necessarily so. When a vague event is unfolded, elucidated, the purpose behind it is explained the reader is being better informed. He understands better. To be able to thus get behind the scene requires drive and initiative. It calls for innovation, arriving at a new slant and seeing the problem as it has never been seen before. This is what educational journalism is all about

There are various requirements to be truly innovative. Identifying the target audience helps to focus the reports and articles rightly. Educational journalism can be directed to all; but, primarily to the youngsters. Since there are others too, there is need to understand *who* are being educated, *what* we need to educate them about, and *how* it can best be done. Specifically, it relates to those who are involved in education, or those conventionally being educated. It is necessary also to consider who can be fruitfully educated through journalism to make them useful to society.

The medium through which the audience can be reached is equally important. There is a wide variety of magazines and their readership is not truly in water-tight divisions. Comics are directed at children, but are read by all age groups; career magazines which are generally popular with youth, are studied by parents and guardians. So is the case with publications on hobbies, sports and short stories. College and school products are in a different class as are women's and film magazines. For them and the daily newspapers, there are four basic types of treatment. The informative type gives data, educates and enlightens; argument uses logic and gives point of view; narration gives happenings in the cause-and-effect form; and description of ten tells what the "scene" was like. It will be noticed that everything can be educational.

Innovation in all these forms means giving details not known and using examples not mentioned before. There have been quite a few articles on drug addiction; yet more information can be given, a new argument presented, a typical case-happening narrated, and the scene in a drug den described faithfully. Follow an adict and put into print all the details in the form of "A Drug-taker's Day." The subject of scholarships can relate to foreign aid for Indian boys' studies, careers in government, carving a future, etc There is no limit to the human mind and its projection of ideas in a new garb. In fact, any subject can respond to the demands of innovation.

College magazines are generally drab because their editors lack initiative, are oftern hedged in by poor funds, official firmness, and poverty of ideas. They can do with innovation in design and lay-out, choice of subjects, drawing more contributors. Yet, within colleges, there are individuals, groups and associations that are not easily put off by any limitations. They bring out cyclostyled issues, distribute them and, if need be, write all the material among themselves.

There are a few qualities that an innovative educational journalist must develop. Anyone seeking to become a good journalist in the general sphere has to have an adequate vocabulary to be able to communicate. This does not necessarily mean a large collection of words. Logicality and social insight can help him identify what needs to be written about. With deeper experience in a vast spectrum he can pick up useful, often innovative angles for his writing.

Specifically for the innovative writer, there is need for willingness to learn and improve, enthusiasm for work, and imagination and inventiveness. Being an educationist sometimes helps, but can also be a hazard because formal education and practice at time brings in a regimented way of thinking. Without innovation, educational journalism cannot perform its required role. Drabness can be the death of any writing. News given in a standardized manner is ignored. Sameness destroys readership Routine defeats enthusiasm among reporters. Imagination and ingenuity alone win.

Educational Magazines — An Innovation in Education

S.N. CHATTOPADHYAYA

EDUCATION has its romantic dimension and mystic parameter, marked by emotional configurations of smiles, tears, anxieties, hilarities, hatred, rivalry, suspicion, and so on. It is a different world so near and yet so distant. Those who are directly involved in schooling affairs pine for communicating their experiences and feeling, those not involved, look with wonder with the intensity of probing eyes. School being a miniature society, emotional waves and thought currents raised therein have deep sociological, cultural, political and economic dimension and fall-out in society. Hence life and events therein are significant horizons for journalism especially for their educative, cultural and recreational dimensions. Apparently though school appears as a prison house of ennui and exhausting boredom, yet a genius like Dickens (Saleen House—David Copperfield) or Bibhuti Bhushan Banerjee (Anuvartan) could make this world an immortal piece of literature. It demands innovative journalism to portray it with sincerity.

Scope of Innovation

The scope of innovation is quite wide. There might be innovation in (1) determining the objectives of educational journalism, (2) in deciding the clientele, (3) in designing the format, (4) in planning the approach and style of writing, (5) in deciding the content area of writing, and (6) in talent hunting and selection of writers.

Objectives of Educational Journalism

The objectives of educational journalism are:

1. Providing correct and relevant information and knowledge with regard to the problems and events in education.
2. Providing recreation and enjoyment to the reader by narrating interesting in-side stories of educational life. It provides the romance of reading.
3. School is a part of society's history and writings on it serve as a piece of historical literature or as sincere historical records for the society.
4. Educational survey, study, reports, etc provide research materials that can serve as feedback and enrichment materials for further research.
5. Educational journalism enlightens, awakens and guides the policy-makers.
6. It is the portrait of the rise and decline of the culture of a society. Educational journalism transmits and propagates the cultural waves raised on the campus.
7. It analyses the trends and examines the direction of the energy of the institution

opening the flood gate of a movement in society

8 Any writing on the institution helps the teachers, pupils, parents and members of the community to make a self-analysis by focussing their image in that mirror. This self-appraisal causes attitudinal changes — change in the philosophy of life—and sets the values of society in the definite rail

9. It removes the alienation of the teachers who are usually found to be prisoners within their own cocoon of values and ideas. It helps communication of ideas and organised action programmes of teachers, students, parents and others involved in education.

10 It is a bridge between the academy and the state-between the teaacher and the international organisations of teachers by providing a forum for thought, and plan of action to raise the standard of the quality of life for a better world.

Clarity with regard do the above objectives and formulation of a definite plan of implementation demands guidance from bold and innovative journalism.

The Clientele

Innovation of educational journalism has to be planned keeping in view the sections of readers. These readers usually are :

1. Academicians and pedagogues who have time, interest and scope for exhaustive reading. But serious study is now replaced by superficial seminar talk.
2. Educational planners, administrators and mangagers who have little time to concentrate but are interested in relevant write-ups on administrative, financial or policy matters.
3. Teachers — they have keen interest, but little time, energy and power of concentration.
4. Students — they have limited scope of study. They have a utilitarian approach to study. Examination is their main goal.
5. Parents — they take casual interest in educational writings and are afraid of serious writings.
6. Politicians and policy-makers — they take resort to the sense of hearning rather than on seeing prints with eyes. They have no time for serious reading.
7. Social reformers and community leaders — they learn through meetings, conferences and seminars rather than through reading.
8. Journalists — who read for professional competence and survival.
9. Research workers — they are serious readers. They include historians and sociologists.
10. Investigators — they are temporarily interested in serious reading. They include lawyers, jurists, civil servants, etc.

An imaginative and creative journalist will innovate, keeping into consideration the readers he is approaching. His objective, approach, style, content and issues will have to be adjusted, keeping in view the group of readers and their level of intelligence, Knowledge, understanding and socio-economic professional background. An innovative journalist may bring our serious and highly technical complex pedagogical issues in simple lucid style understandable and interesting even for all groups of readers. But since educational journal is considered a professional journal, even serious pedagogical issues may have to be dealt with in the approach of a researcher, but care should be taken so that the main theme is legible even to the common readers. There lies the creative talent and innovative vision of the journalist.

Designing the Format and Get-up

The format and the get-up should be so designed as to provide a sober affect. It should not be too ornamental and decorated with a large number of cumbersome pictures. Necessary and relevant maps, charts, graphs, pictures and sketches. Certainly enrich the body of the journal. Photographs of old schools and schoolmasters or facsimiles of old letters excite the imagination or readers. Dullness of professional journals can be reduced by prudent choice of pleasing colour for the cover-page. Pictures or sketches of audio-visual aids for teachig make the journal quite interesting for teachers and students. Advertisements of educational aids and books should be brought out in an imaginative style. They should not be dull. Cartoons should have wide social, cultural and political perspective. Cheap jokes about school masters are considered to be outdated and boring

Planning the Approach and Style of Writing

1. The approach of a commoner, engaged in simple dialogue with brevity, lucidity and precision is the best approach of a good journalist.
2. Story-telling approach is traditional but relevant and exciting for students and common people.
3. Emotional and artistic approach of a literateur makes reading pleasant and romantic. Dicken's description of Salem House is an immortal piece of literature.
4. Approach of a historian—It has the combined approach of the probing researcher and excited explorer. It takes us back to our cultural heritage inculcating a spirit of optimism in our destiny.
5. Research approach—Analysis of the available data, verification of the hypothesis and drawing a conclusion with assurance of validity and objectivity mades the study exciting. Investigation of unexplored areas or subjects is an exciting pursuit.
6. Approach of a teacher-classroom and campus life appear to be mysterious and exciting. A teacher is exhilarated when his own life, experiences, anxieties and emotions are described from different angles of vision. He relishes simple, matter-of-fact and lucid style sans verbosity and absurd romanticisation in writing about the campus.
7. Investigative Journalistic approach—This approach has idealistic as well as utilitarian objectives. A journalist wants to probe about a problem, focus on it to awaken the people to create public opinion and, at the same time, to widen the criculation of the journal for monetary benefit. The large mass and the cross-sections of the population appreciate this approach. This needs orientation, ethical principles, boldness, challenging attitude and vision of the journalist.
8. Diary approach — Diary of a teacher educator or student instantly creates a rapport of the reader with the past in so far as the institution or its inmates are concerned. An old letter of some pages from the diary of the teacher or student printed in the journal thrills the readers. The journal plays the silent and objective role of a bridge.
9. Approach of a satirist — Dishonesty, negligence, coercion, malpractices, groupism, violence, victimisation, etc, are some of the crimes usually prevalent in the academy. A journalist portrays this in the style of a satire. It incites and agitates the readers and threatens and stupefies the criminals in the academy.
10. Letters to the editor — This is an important part of innovative journals. Here the reader interacts with the readers and ventilates his grievances. A rapport between the reader and the journal is established.
11. Book Review — Here the reader interacts with the academician as the book reviewer analyses the book in the light of his knowledge, values, personality and socio-cultural background. He communicates with and directs the readers in a different line of thought. Thus book review is a segment of creative journalism.
12. Psychological Approach — To a layman the mind of the child and his behavioural traits have a touch of mystery. So when a psychologist delves deep into the mind of

the child to focus on the currents and cross-currents operating within, it becomes an enterprising research assignment to the psychologists, but appears to the common reader as full of wonder, excitement and romance, because he looks back and explores his own childhood. Innovative journalism must concentrate on this mysterious domain of the mind of the child.

The style and approach of the journalist or psychologist, of the researcher or of the teacher-all must strive to come to the level of understanding of the common readers, without losing the touch of professional seriousness, and without reducing the journal to the level of a pop magazine. the knowledge interest, attitude and values of the readers and the need of the society must be kept in view But, above all, innovative educational journalism must keep the child as the focal point.

Who Should be the Writer?

The innovative educational journalist as an editor must keep wide contact and have wide open mind while selecting writers. Bias, prejudice, dogma, parochialism and reactionary feeling of the editor in collecting and selecting write-ups are the very negation of innovative journalism. A writer should be sensitive, creative, and with wide vision and imagination. He should have wide experience and information about the personalities, events and issues in the academy. He must have a sense of identification with the institution and the inmates. Above all, he must have a flair for writing. He must have the required emotional frame of mind to be an innovative writer. An innovative editor must take into consideration the following :

1. A creative sensitive teacher with imagination and vision.
2 A reporter with the inquisitiveness of an investigator.
3 A journalist with literary taste
4. A research worker
5. An educator or academician.
6. A student with talent.
7. An inspector of schools, supervisor or teacher educator whose views on the academy are interesting and useful.
8. An educational administrator, manager or planner.
9. An artist, poet or novelist (Like Nandalal Bose, Tagore and Dickens) whose keen observation and intense feeling help depict the true portrait of the instiution.
10. A conscious parent.
11. A missionary or social reformer or community leader involved or interested in education.
12. A visitor to the institution or member of a foreign cultural delegation.
13. A politician involved in education.
14. A historian recording the history of culture and civilization.
15. A sociologist, economist or political scientist.
16. A lawyer or jurist enquiring into school litigations or other problems of the academy.
17. A police officer or jailor looking into the violence or crime among adolescents.
18. An examiner, curriculum expert or textbook writer.
19 A trade unionist looking after the interest of teachers, etc.
20. A child psychologist or career guidance officer.
21. A librarian.

The above can help innovative journalism in a big way.

Content of the Journal

The kernel of innovative journalism is the content or topics that find place in the journal. An imaginative editor must swim with the current, keeping abreast of the latest developments and movements in the field of education. He must be well informed with regard to the area of specialisation of writers. He will pinpoint the relevant topics and assign the writers to write on the same. The editor must keep in view (1) the social and cultural environment, (2) the level of understanding and the area of interest of the readers, (3) the ability and specialisation of the writer, and (4) the possible impact or effect of the writing. As an accomplished psychologist, the editor knows that every adult has a soft sensitive corner for the school which reminds him of the sylvan idyllic days of his childhood and invites him to that world of freedom and joy. Even the ordinary appears like a miracle in so far as writing on school education is concerned. Some areas that provoke intense exhilaration, excitement and curiosity in the readers are:

1. Biography of unknown great teachers.
2. Some significant social events having bearing on schools.
3. Follow-up study of the pupils' life
4. Mind of the child.
5. School and crime with special reference to sex crimes.
6. Politicisation and bureaucratisation of schools.
7. Some events in school having impact on society.
8. Elitism and school.
9. Great community leaders and their contribution to schools.
10. Rise and decline of an institution.
11. School as the nucleus of social and cultural movements.
12. Fraud, commercialisation and exploitation in school.
13. Teachers' mind and behaviour traits.
14. School plant—wastage and preservation.
15. Economics of school education.
16. Missionaries, monasteries and school education.
17. Women's struggle for education.
18. Struggle, tension and experiments of great educators.
19. Simple events in school life or future great men.
20. Classroom practices, problems, movements and achievements in other countries.
21. Comparative study of curriculum and textbooks of different countries.
22. Socio-cultural background of teachers and pupils.
23. Mishaps and tragedies in school.
24. Emerging values, value crisis and curricular adjustment.
25. Generation gap and confrontation among students and teachers.
26. Appraisal of teachers by students, parents and the community.
27. Excitement and boredom in school.
28. School festivals and their impact on students and teachers.
29. Application of new media and its impact in education.
30. Textbook writer speaking to the students and teachers.
31. Reunion of old students and teachers.
32. Review of classics in education.
33. Interview with parents, teachers, students and administrators and the interview report.
34. Diaries, letters, memoirs of old teachers and students.
35. School litigation and case studies.
36. Awards and punishment of teachers.
37. School background of great men and criminals.
38. Report of commissions and committees.
39. World-wide pedagogical movement and its fall-out in local schools.
40. Struggle of trade unions.
41. Experience of teacher training programmes.
42. Narration of school trips or school projects.

The above areas of discussion are relevant to (1) the life of teachers, (2) of students, (3) of parents, (4) of the institution. They have relevance to the community, the state and the academic world. Whenever school education bears a wide dimension related to broad social, cultural and political issues, the common people place significance on the same and keenly follow the movements. The innovative journalist helps through his columns in following the movements.

Freedom in Respect of Information

Innovation in journalism must stress new information order This entails correct and honest presentation of facts, events and personalities associated with education. New innovations and experimentations, thoughts and ideas, developments and movements in schools of advanced as well as unadvanced countries must be reflected in the columns Nothing should be suppressed Again, every writer must be assured of freedom of expression. His voice should not be checked.

Co-ordinating and Supplementing Technical and Folk Media

Innovative journalism in education must take note of the news and views propagated by the Radio, T'/, film, folk theatre, etc. and, if necessary, the print media should guide and direct other media, because print media is always controlled by the intellecutal elite. This control and direction will create balance and harmony in thought waves and the world of ideas. The gap, chasm and conflict in differnet media channel have to be removed by innovative educational journalism.

Innovative journalsim demands wise and imaginative arrangement of topics and columns to remove monotony and attract various cross-sections of readers For instance, the editorial should serve as the foreword and preamble of the issues of the journal. Symposium on a significant issue should follow. Serious articles of relevant educational issues should come after that. There should be sections like (1) research and innovation, (2) new horizon in pedagogical thoughts portraying new waves in education in other countries, (3) the school and the curriculum reflecting on the problems in teaching, (4) experimentation in the classroom reflecting on how the school master solves the problems facing him, (5) satire on school environment, personality and policies, (6) extracts from writings of great educators, (7) relevant quotations, (8) reports, (9) pupils' column, (10) parents' forum, (11) current events in the world of school education, (12) book reviews, (13) letters to the editor. These columns should be interspersed with suitable relevant quotations from great educators, statesmen and policy-makers.

Innovative journalism is the combined creative efforts of the editor, the artist and the writer. Innovation entails creating wider interest among readers in an area not traversed by them so long. It enlightens, awakens and organizes for a movement. Innovative educational journalism involves the people in education and advances participatory democracy. It informs and sensitizes the government and the power elite. It removes the barrier wall between the world of education and the world around. It conserves and transmits the wisdom of society for the progress of the institution. Innovative journalism makes an educational journal an enjoyable piece of literature, an excellent object of art, a significant record of history, a serious report of investigation, and an important document for the state and society and a commendable research finding with reliable solutions. It entertains, sesitizes, informs and guides.

Experimental Laboratory Journals in Indian Universities

(DR) V.L. DHARURKAR

EXPERIMENTAL laboratory magazines play an important role in reshaping journalism education. They can be treated as a tool of mass communication education. It has been well accepted that the future of Indian journalism lies mainly with the language press. It is recognised by most communication journalism educators that efforts should be initiated to introduce these courses in Indian Universities.[1] However, in addition to this, sincere efforts are also needed to strengthen experimental laboratory journals published by various journalism training centres in India.

On the basis of UGC report on the status of journalism and communication education in India, it is clear that only four out of 23 University departments do not publish any laboratory journal. The others do with varying frequency. The periodicity varies from occasionally or twice or thrice a year, as many issues as the number of students — about 30.[2] Some departments produce more than one laboratory journal — in English and Indian languages.

Methodology

The following methods were adopted for the present study on experimental laboratory journals :

1 *Content Analysis*

The content analysis method was applied to a few journals and the material presented was scientifically analysed According to Good and Hatt, content analysis can be the best tool for measurement of print media.[3] As the laboratory journals contain sociological data of significant nature, they can very well reveal the nature of our educational standards.

2. *Comparative Approach*

Various experimental laboratory journals available were compared, keeping in view the various factors such as printing, graphic design, nature of content, style of editing, photography, etc. These comparative approaches provide a scope for improving the viability of Indian laboratory journals.

Evaluation studies these days do not only aim at the physical achievement of a project or theme but have revealed attitudes, interests, thinking patterns, work-habits, socio-cultural adoptability and psycho-dynamics of the group in which or around which the project has been launched[4]. Laboratory journals can also be treated as small communication projects and they have a potential force to bring a change in journalism edcuation, on the one hand, and language journalism, on the other.

Objectives

The following aspects can be enlisted as objectives of this study .

1. To study the nature of the various experimental laboratory journals in India so as to make them relevant for the development of journalism as a profession in India.
2. To highlight the major problems in editing of such journals and suggest corrective measures to improve these journals, in order to meet the hopes and aspirations of young journalists.
3. To recommend various remedial measures for neat printing, correct editing and right training by using these journals. As a tool of journalism training and instruction, these laboratory journals can become more viable for education and extension, if properly planned.

Nature and Content of Laboratory Journals

The following characteristics can reveal the personality of these journals :

1. *Sociology of Laboratory Journals*

   The names of these journals can be broadly divided into four types. Two of them have institutional names, four of them have a direct correlation to journalism education. Three of them have a regional or local touch. Three of these have educational tune and the remaining four go into cultural anatomy. This clearly reveals that Indian laboratory journals have their own personality based on socio-cultural or education panorama. In near future, socio-cultural titles of the laboratory journals would be certainly dominating. Based on the sociology of mass communication and looking into the nature and functions of these journals, this is a growing trend. Modern social scientists have observed that much of the debate about media in contemporary society has a sociological dimension, they have most immediate applicability to media analysis.[7] Educational laboratory journals are also not an exception to this phenomenon.

2. *Size of Laboratory Journals*

   Laboratory journals in India are generally in tabloid size and they are of four, six or eight pages. These journals have an interesting fusion of house journal and educational journal. They record changing trends in journalism. Most of the these journals have an independent language base. Only high level institutes have independent English publicaitons. Language publications have a substantial base for training.

3. *Educational Content*

   Experimental laboratory journals have a graphic account of campus activities. The contents in these journals are carefully edited and most of the material is scrutinised by student editorial boards under concerned teachers' supervision. It appears that educational control in these journals today is mostly report-based. On the contrary, they must have a significant share of critical abalysis at all levels. If properly planned and neatly presented, the content in these journals can have more depth.

4. *Student Participation and Involvement*

   Experimental laboratory journals have an educative goal expected at all levels. Mere column writing is not worthy, what is needed is student editors' active participation and involvement in these journals. The more the students will be involved, the more they can share the process of editing. These journals should never merely share the student editors but, on the contrary, they must highly infulence the upcoming editors regardinng the values and convictions of journalism as a socially responsible profession.[8] Experimental laboratory journals are tools of media education, hence they must play an important role to bridge the communication gap. It is a truism, of course, to point out that a college diploma or its equivalent in individual attainment is only the beginning of life time of education.... Every aspect of human experience and emotion can become their concern, the world changes and so must their ability to understand and interpret these changes. This can be aptly testified to experimental laboratory journals in the future course of their development

5. *Multi-fold Role of Laboratory Journals*

   Experimental laboratory journals in India have to play a muti-fold role. They have to perform extension role and self-education role at once. A laboratory journal can never be an individualistic enterprise but it must be a collective effort at writing, editing and printing. The words and ideas spontaneously sprouted from the forum for younger mind appear on the mirror of these journals. The names appearing in these journals can become legends in the profession in the future, if they are will-trained and well-edited. It has been pointed by William Rivers that editors best serve their writers when they represent the reader, so the best editors try to ask questions the readers might ask.[9] Laboratory journals can become such forums.

Content Analysis

A careful study of the three major experimental laboratory journals reveals that the ratio of the content in these periodicals is constantly changing. On the contrary, social edcuational material and scientific coverage is increasing. This is a growing and welcome trend. We can suggest that more share must be given to the students' material on various media processes. Laboratory journals must provide experiences to the upcoming journalsists in order to reshape their career to infuse new spirit in the profession. As testified by a case study, laboratory journals are providing more scientific coverage in modern times.

This content analysis clearly shows that scientific coverage in experimental laboratory journals is increasing in high tone. They are able to play a social-educational role to change the profile of Indian education.

Noteworthy Experiments

It is interesting to note that Indian universities are slowly progressing in the publication of educational journals. Times Enquirer published by TRFI School of Social Journalism (TRFI Institute of Social Sciences) is regular, neatly printed, and has a clear perspective in its publication. Students Reporter published by the Punjab Universtiy is also worth recording. The efforts made by Vratta Vidya (Pune University), Vidya Samachar (Karnataka University), Calicut University Chronical (Calicut University), Vratha Sadhana (Marathwada University) are also worth recording. Vratta Vidya of the Pune University has brought out a special number on the occasion of the Indian Science Congress and it is interesting to note that Times Enquirer of TRFI has also given a major contribution

Content Analysis

S.No.	Particulars	Times* Enquirer	Uni-voice**	Vratta Vidya***
1.	Social-educational	7.9	17.03	3.0
2.	Scientific	12 15	18.09	44.6
3.	Media	2.05	7.8	13 2
4	Opinion	2.0	10.8	—
5.	Political	7 2	4 4	—
6.	Photo journalism	2.0	1.7	4 9

* Times Enquirer: 21st Dec, 1987, p 4, 30x45

** Uni-voice: 2nd Nov, 1987, p. 8, 25x35

*** Vratta Vidya· 7-1-1988, p 8, 30x45

to scientific coverage Media analysis and photo journalism are also growing trends

Experimental laboratory journals have a long way to go but they can certainly make an important contribution in training and orientation of new journalists and, accordingly, they can improve the standards of journalism education and they can also help meet the needs and aspirations of mass media in 2001 A.D. Training in editing in the electronic era may be provided by supporting computers and ENG[10] computerised equipments to modernise these journals.

Problems and Remedies

The above discussions clearly reveal the following facts in brief in the editing of experimental laboratory journals of Indian universities:

- Lack of printing facility is a major problem in the editing of laboratory journals All the journalism and mass communication departments must have independent printing press. Most of the university departments depend on university press, where they cannot get a chance for regular publication due to busy schedule of printing.

  Student reporters and editors must be provided regular assigment books, to examine their performance in editing. The gravity of involvement can never increase unless and until credit line is given to the beginners. According to M.V. Kamath, a beginner will never get a by-line without hard work.[11]
- At least four issues of experimental laboratory journals must be published regularly under a board of editors. Participation in these journals must be made compulsory for both degree and post-graduate students.
- Few of the these journals are registered and the rest of them are left at the mercy of time. Registration can bring regularity in the publication of these journals.
- Along with students' participation in laboratory journals, research-based magazines are also published. Interface (Osmania University) and Varuna (BHU) have opened a new horizon for research journals. Each laboratory journal, if it has a research publication, can add a few more dimensions of mass communication problems.

Conclusion

Experimental laboratory journals can play a vital role in journalism education. Students' involvement and participation can be increased by conducting workshops and by promoting orientation camps. If regular assignments are carefully examined and implemented, laboratory journals can get a new life of modernity and novelty. The present nature of these journals looks ritualistic, dull, dry and monotonous. If the seeds are sown properly, these journals can become a forum for evolving master journalists. A specialist of tomorrow can make his headway on this battlefield of words. Career builders can have proper guidelines on the base of this path.

In order to reach the new frontiers of communication revolution in 2001, we have to rearrange these journals making them more suitable and relevant to the time. Looking into the past experience, we have to face the electronic revolution with more solid and sound decisions. Both software and hardware training must be provided by reshaping our laboratory journals to achieve excellence in journalism education.

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College Magazine as an Educational Journal

HYACINTH PINK
NALINI NAMBIAN

THE twentieth century is certainly "the best of times and the worst of times", as mass media is constantly reminding us While the media proudly acclaims the march of man towards a technological age—sometimes achieved at any cost, it also makes us aware of a nagging fear that all is not well with Man, inspite of his so-called advancement. Moral and cultural values have ebbed to a point almost beyond retrieval — a state which has led to untold miseries at the political, social, economical, psychological and religious levels. Those who attribute this fall in values to the influence of the influence of mass media, are many; and it is true that mass media is often responsible for destroying the morale of individuals and nation's by its supply of unwholesome diet to the public. A lot of soul searching on the part of mass media has revealed the reasons for this derailment; and consequently, earnest attempts are being made to set it on the right tracks, by focusing attention on educational journalism.

The quick development of communication and its various forms, and the spread of information have opened up new vistas and increased the link between education and communication This has resulted in an obvious increase of the educational potential of communication. Today education is no longer the monopoy of the education system. Communication, while being a vehicle for education, is also a subject of education Education is an essential tool for teaching men to communicate better and to draw greater benefits for the exchange established between them Thus, there is a growing reciprocal relationship between communication and education.

Educational journalism seeks to disseminate news and views on various educational innovations, experimentations and educational policies of the country.[2] It also helps to create an awareness among the teachers, students and administrators about the achievements in the ecucational field. In addition, it helps to envlove and innovate academic improvement of programmes of education.

Since educational journalism is more of a public service than a commercial activity, it endeavours to create a learning environment in keeping with the national policy resolution of having the freedom to devise suitable methods of communication for the needs of the society. The common man too must be made aware about educational issues and, therefore, educational journalists seek to awaken and enlighten him. This is the crying need of today, when education is regarded merely as an expedient or means to a material end. The consequence of such an outlook has given way to cheap, superficial educational methods. The culture of the mind, which is a moral and even a religious obligation, is sadly forgotten. Educational journalism seeks to set right matters by generating new knowledge in various fields, evolving principles, methodologies and guidelines for the application of this knowledge, and enabling students to cultivate an understanding of the environment. Besides this, it also stresses on the socio-economic well-being, competence and creative ability of the individual. In short, its purpose is to enable an individual to find himself, make himself and become a man. As Aldous Huxley says: Every man who knows how to read has it in his power to magnify, to multiply the way in which he exists, to make his life full, significant and interesting

It is in the light of the above remark that the college annual book or magazine which is well suited for the purpose of higher education, but whose capacity for educational significance is hardly exploited by a majority of educational institutions, is discussed.

From Ornamental to Functional

"The real purpose of books, says Christopher Morley, is to trap the mind into doing its own thinking". Do the annual year books of education instituions fulfil this purpose? If not, can they be transformed from the show pieces that they are now, into an effective tool for education. These are questions that demand immediate attention

A college magazine should have a reason for being. It should be the gradual and natural outcome of the college activities and not exist becuase the academic routine demands its presence. Often a college magazine serves as an end in itself. The fact that it can and must be a means to an end is often overlooked. However, with the recent stress on develpment and educational journalism, the college magazine is looked upon as an effective teaching - learning tool; and it will not suffice if such books continue to be produced annually as ornamental pieces by each educational institution Therefore the purposes or objectives of a college magazine have to be restated

Objectives

1 It must evolve from a decorative to an educational journal which reflects the ideology of the concerned institution.

2 It should help to identify and nurture the creative talents of both the students and the staff for constructive contribution to the cause of education through their writing.

3. The magazine should provide opportunities for unfolding hidden potentialities of pupils in contributing their best through this educational magazine.

4. The college magazine should serve the community. It should be microcosm of life that is reflected outside and therefore if it does not reach out to society, it has no purpose to exist.

5. It should reflect the thinking of the instituion. There should be a co-relation of the student voice, staff voice and the voice of the management so that it leads to the growth and developmnet of the three bodies.

6. It should serve as a community link to the mass society. Since the college magazine is the only symbol of the institution, parents, students and educated people read it. So the type of readership should be remembered and catered to.

7. To develop both reading and writing skills and habits of the teacher and the taught.

8 To encourage teachers and students to take up research studies and develop new methods on various aspects of educational journalism.

9 To develop inter-personal and intra-personal relationships.

10 It should be a teaching tool of quality-contributing to higher education and its concepts.

Due to the narrow or selected readership of college magazines, they have unfortunately fallen into frozen formula of production, resulting in stereotypes both in content and style. Rarely do they serve an educational purpose and at times they are merely propaganda. Most magazines devote precious pages to annual reports (extending to size pages in a book of eighty pages), and still lengthy tabulated results in annexures at the back of the magazine (usually 1\4 of the book is set aside for these dry facts which no reader ever even glances at). Detailed versions of extra and co-curricular activities, already mentioned briefly in the annual report, occupies another good part of the book. This is sometimes "enhanced" by a collection of (sometimes haphazardly thrown in) posed photographs with wooden captions or cutlines

A perusal of the articles again reveals stereotypes. Rarely do these magazines exploit the advantage of profiles, 'how to do it' articles, analysis or reviews. Instead the standard version is — descriptives, personal experiences, narratives and informatives. Often the contents provide information, rarely education. Most college magazines are blissfully ignorant of their social responsibilities, accountability to the public, and their power of influencing opinion, conduct and action in political, social, economic and cultural fields Such an awareness is very necessary in a democratic nation like ours, so that the college magazine will help in national development in the long run It should no longer be a mere collection of routine facts regarding college activities, but related to development in the academic field. Hence the focus should be on campus life, soico-economic issues, student problems, student-society relationships, rural development, educational reforms and their implementation

The editional board of a magazine would do well to ponder over the following questions, while evaluating the magazine ·

1. How much space is allotted to educational news items?
2. Do special articles find a place in it? If so, do they include comments on education?
3. Do articles presented inform, instruct, suggest opinions, evaluate, or criticise?
4. Are there reports or articles on innovations in the educational field, which are part of the college programme. Are these understood by the public or do they go unnoticed?
5 Does the content matter and the style of the magazine arouse interest and instill others to participate in these programmes.

As the college magazine is the yardstick by which society measures the progress of a college, great attention should be placed on its content and style. To achieve this, the editorial board or working committee should comprise of a body of carefully selected staff and students representing all the departments—of people who know what and how to present or communicate. A knowledge of fundamental journalistic techniques and an indepth knowledge of education is a must for the staff, if their venture is to succeed. One way in which students who have a flair for journalistic writing can be encouraged, would be to involve them in gathering news, reporting, and writing on all sorts of events within and outside the campus. Such students can be assigned the work of maintaining student newsboards, organizing essay competitions and debates or even reporting or writing on college exhibitions, forums, educaitonal excursions and interviewing significant personalities associated with their college activities.

To make it an effective working system, the editorial board should consist of various editors for academic, sports, Fine arts, co-curricular, adult education, advertisement and even religious and ethical activities. The work of the editorial board would further be lightened if each department maintains its news letter or journal twice a year, keeping in mind the theme for the year. This enables the editorial board to go through the various departmental journals and pick up the choice articles, features, columns or letters at the end of the year, for the college magazine. This will ensure not only relevant, quality items in the magazine, but also censored, edited and checked content matter. Of course, care should be taken to see that students' articles find more space in the magazine, and a separate journal should be published to serve the purpose of the staff. However, for the sake of variety, a 'Teachers page' can be set aside in the college magazine. In addition to the usual items in the magazine, the following could be added:

1. Articles/features, etc on human relations
2. A section on teacher-taught relationship
3 Ethics
4. Woman's cell
5 Social welfare programmes
6. Student evaluation column
7. Staff evaluation column

8. Management evaluation column
9. 'Brick-bats' column
10 Examination column
11. College critiques (outsiders' viewpoint)
12 Gossip column/college rags
13 Prize winning recipies, etc.

The choice of captions for articles should be innovative while photographs and outlines should be 'alive'. The motive of the magazine is not to sell the structure of the college, but what happens within the structure of the college.

Again, in the choice of advertisements, those advertisements that break down the philosophy of an educational institution should be avoided, (e.g cigarettes, alcholic drinks, etc.). Advertisements too can be selected relevantly, i e. in connection with academic disciplines For example, advertisement for medical instruments(Nursing department), agricultural advertisement (Botany department); preservation of wild life (Zoology department), advertisement on kitchen utensils or cosmetics (Home science department). A feature article just before the advertisement, but related to it, will further justify its presence in the journal, while adding dignity to it. Even the front page should be developmental without too much of ornamentation and colour. The simpler the cover, the more dignified the journal, for its purpose is not commercial. On the whole, the space allotted to educational development should exceed other matters.

Regarding the style, care should be taken while reporting or writing on developmental projects. "The best magazine writing integrates the digging of the investigating reporting with the easy flowing style and flair for bright language of the feature writer".[1]

Therefore an indepth study of on-going projects is very necessary. Skimming over matters, or a helter-skelter collection of facts as is often done in newspaper reporting will not suffice for a magazine. However, the matter that is written or reported after probing into a subject of specialisation, should be in a simple language. It should be on a level that can be comprehended by the particular section of audience the college magazine is meant for, but it should not be over-simplified Education material should be thought-provoking, with a high education value, and its style, though simple, is not the style adopted for material for light reading.

The print media offers many articles regarding education and activities in colleges. The editorial board of the magazine could collect these clippings and print them in the college magazines annually This will aid the society and the college to guage and realise the achievements of different educational institutions and thereby radiate education through the magazine, besides winning the respect, regard and recognition of society.

Each educational institution would do well to be aware of other institutions engaged in educational programmes and their latest studies. Such studies can be reported in the annual magazine for the benefit of all.

Communication is a two-way process which involves dissemination of message and also feedback. The latter especially is very important, as it can contribute to modifications of the presentation of messages and also modification of policies and programmes to meet the felt need of the society. Therefore, the editorial board should invite opinions from students, staff, management and the public for the purpose of evaluation and improvement of the magazine the following year

A very important criterion is that the magazine should comprise of articles reflecting the changes and growth yearly. These articles should speak of the previous year's changes and the present year's developments. Constructive criticism of the past efforts for the sake of growth and recommendation for improvement in the future year, should find a place in the magazine. Thus the magazine should be infused with an awareness of the future, keeping in mind the scope of each discipline, and planning systematically to meet the future. To make this a reality, scientific studies of probable future should be introduced as one of the unavoidable features of the college magazine. Changes are inevitable and a reassessment of change is necessary for a positive future. The assumptions about the future will be saved on the potential consequence of the present endeavours of the college A reassessment of this nature in the college magazine will help in a conscious control and guidance of quick changes that occure. Ultimately in its final perspective, the college magazine is a reflection on what the institution had achieved in the span of one year and what it is heading towards in the future. Thus it should be a beacon that gives the institution its sense of direction, evolving from artistic reflections into moral, philosophic or religious dimensions.

Conclusion

The college magazine, therefore, stands in need of immediate reform 'Reform' implies a re-examination of fundamental principles on which the magazine is based. While re-thinking and re-setting the objectives of the magazine, a shift must be made from the dead letter of the principles to the living spirit they embody. If the college magazine is to have an educative value, it cannot continue as a decorative piece Instead, what it offers must be serviceable, when translated into life. Its main focus should be to unite learning with the art of living.

If the college magazine metamorphosises into an educational journal, its potential to impart continuous and comprehensive learning would be immense; and this is just what is necessary to the fast advancing world of today. Further, it is educational journals that help to bring about a qualitative improvement in education. New trends in educational thought have resulted in a good deal of experimentation and changes in the methods of education. Educational journals are today seen as aids which assist educators, save time and obtain the benefits of the process of modernisation They reveal the potentiality to provide for continuous reappraisal These journals also function as outlets for constructive criticism, thus preventing the stagnation of thought and action. More than newspapers and other forms of media educational journals have the scope to reveal new national policies and programmes and their outcome Therefore, they become authoritative source material for reference and research. Moreover, teachers and researchers get the opportunity to express themselves, publish their findings or review books, all of which are essential for their professional growth. An educational journal also offers avenues for interaction between the teaching and learning communities in other parts of the country or even the world. This, in turn, leads to worthwhile contacts and comradeship and of course national integration and international understanding The future tools of (educational) journalism together with an accelerated revolution in communication technology are going to bring to fruition, within a decade or two, McLuhan's concept of the global village which envisages access of international communication to each and every individual in the world. Such an ideal could alone pave the way for the growth of a wider international culture already in the process of making[1].

Though the readership of a college magazine may be narrow, it can definitely play a helpful role in accelerating the developmental process of the nation by publishing developmental schemes and their long-term benefit . The consequence would be an improvement in the material standard and quality of the masses

Thus a college magazine should re-think its goals and take strides to evolve itself into an education journal, to meet the demands of new trends in education It has a great role to play in highlighting the strengths and weaknesses of the educational system in a country and so also revealing to the public, as to where the nation stands and what can be done for improving the existing situation.

The true meaning of education is open-minded inquiry, earnest search for truth, independent and responsible thinking, fearless tackling of life's problems and increase in moral thoughtfulness. The college magazine, seen in the right perspective, is a creative act which will help realise this meaning in the campus and out of the college portals This would then become a true seedling for educational journalism.

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On Being an Educational Journalist

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A NEWSPAPER editor wrote once, "As editor, I try to influence their thoughts, to mould opinions, to start crusade I want people to follow me, I try to sway, to generate support I plant ideas and desires in the hope they will take root in the community's thinking"

The function of all educational journalists is not unlike the function of the editor mentioned above It is not merely reporting the facts and supplying information to the readers. It goes beyond that and involves interpretation, opinionating and offering supporting reasons for that opinion. An educational journalist writes only when he believes he has something worthwhile to communicate. He also must have a strong desire to share it with the public

Khosla defined the aim of education at journalism as the following "Its fundamental aim is exalting man to his highest growth and development and keeping itself abreast with the pace of progress that man is really capable of." If such is the exalted aim of a journalist, then he should have the courage and common sense to choose issues and problems to write about. This implies that he must also thoroughly research those issues to comprehend their complexity Writing in educational journals is usually serious, scholarly writing. The persuasiveness and acceptability of such writings would depend on the skill of tapping authentic dependable sources. Any good article rests on the solid core of facts, which have to be astutely collected, checked and presented Whenever a message is communicated to an audience, one has to make sure that he is trusted with his basic facts. To quote Khosla again, "educational journalism is concerned with news that can stand the fundamental test of news-worthiness, particularly in the context of its educational significance and importance, its fairness and timeliness and indeed its probable consequence".

Areas of Competence

The areas of competence to be developed by an educational journalist may be identified as the skills of

1. Identifying newsworthy items,
2. Tapping authentic sources,
3. Reporting and writing,
4. Editing, and
5 Being acquainted with the house style

Identifying Newsworthy Items

An educational journalist should have the sensitivity to spot worthy educational topics for writing. Just as a research worker's first task is to identify a viable topic for research, an educational writer must have the knack of locating items in educational area which are of public interest. At different points of time, issues surface on which public mind is veritably exercised. We may quote, as an instance, public interest in the current topic of the New Education Policy. Any analytical write-up on that will find a ready audience. In the late seventies, the reservation policy in education became a burning issue. A responsible press can become an important mouthpiece of people's feelings and opinions on issues that touch their lives Sometimes, however, the issues may not be so obvious or popular but still of great educational consequence once a sensitive journalist has brought it out. It is thus the prerogative of an educational journalist to investigate the topics that would lead to positive, constructive educational journalism. This need sufficient background reading, a shrewd common sense and an alert mind to perceive the possible need of the readers

Tapping Authentic Sources

The next important skill is finding facts from basic reference and source materials. In educational journalism it is necessary to research an issue, problem or question in all directions, in all its important aspects. He should be well informed of the topic so that he is able to comment on the events and issues He is not a mere reporter but often is a trend-setter and an opinion leader. So he must document his news and bolster his conclusions with factual information and supportive evidence.

For well-documented and accurate writing books are the most essential source of reference. A misstatement of fact or the lack of a factual basis for the opinions expressed do little to enhance the audience's perception of their credibility.

The educational journalist, unlike a news reporter, depends heavily on reading for his source of information He may read educational journals, topical books and many other reference materials such as education commissions reports, year books of education, published by the government, etc. Then he relfects He deals with ideas which are largely a product of thought. He depends heavily on observation, though generally he may need to survey the area to know the actual state of things about which he writes.

His other sources of information may be conversation with people connected with the programme He may meet them personally to gain information. Another technique for gathering information is brainstroming. This is a fine association technique where a group of people are instructed to suspend critical judgment and to suggest anything that occurs to them on a given problem or topic. Out of this discussion may come entirely new ideas. These ideas should be checked for plausibility and critical judgment must be applied for illumining those possible solutions to problems.

"An editorialist should never write on a topic unless he has some expertise or is sufficiently interested to research the topic, before he sits down to write. It would be far better for the editorialist to fail to comment than to fall flat on his face in attempting to be an instant expert on every issue in the news." This is true of an educational journalist too.

As a journalist has to spend considerable time in refering to source materials, it is ideal that he should set up his own reference library comprising of yearbooks, reports of the commissions, indexes, digests and abstracts. He should also collect papers that contain recent educational statistics (i.e. gazettes published by Government). Educational magazines and journals are also invaluable source materials as they contain expert news on educational matters and report research findings on significant areas. Newspaper clippings on matters of his special interest may be filed for ready reference. He also should have access to, and knowledge about, the libraries where he may search for his information. In short, he should be familiar with the search tools available to him in the area of discipline of his special interest.

"The most useful reference books are the books the user knows best. They are the books he turns to because he knows, they contain the information he wants, he has lived with them".

He should have a personal shelf of reference books and his skill in stacking them and filing as the facts are vital skills to be developed by an educational journalist.

Of course facts are garnered from other sources too, i.e from direct observation, from one's memories, from reports provided by other persons, etc How well he will interview and extricate useful information will depend on his skill in manipulating human beings and organising bits of information.

The more dependable these sources are, the better chances of the acceptability of his thesis. Trustworthiness of these source materials is usually resultant of the reader's perceived objectivity about the sources

Reporting and Writing

Once the information is gathered it has to be put to use to suggest and test some idea to search for the way out of a difficulty or to help provide a valid solution or conclusion to a problem.

Of all the other skills, the most important skill is the presentation of the thesis. "Research can become a contribution to a field of knowledge only when it is adequately communicated The thesis writer should aim at a high level of readability Scholarly writing is not crammed with jargon. Being scholarly is not being verbose, ambuouos 'pedantic or pompous. Sound reasoning and intellectual honesty are hall marks of scholarly style."

An effective journalist should write with clarity and understandingly. A journalist cannot be casual about the use of language A paper must publish news opinions and ideas to mass audience as efficiently as possible. His standard in the use of language must be as high as that of the best educated sections among the readers if it is to retain the reader's respect.

To communicate, one must write lucidly. Robert Gunning, a celebrated editor, suggested . "Keep sentences short, prefer the simple to the complex, prefer the familiar word, avoid unnecessary words, write like you talk, use terms your readers can picture, write to express, not to impress".

Any good writing is writing clearly, a writing that the reader can understand easily. The mass media communicator must have the reader in his mind and make sure that the language and words used are so carefully chosen that these get across to the reader Abstractions should be explained with concrete ideas so that the author's ideas are not obscure.

"Gunning lables his readability formula as a 'fog index'. It isn't likely to convey to its audience with any precision that the editorialist has on his mind".

Jones suggested twenty-six points to make journalistic writing lucid and readable. We present an adaptation of it below.

1 Use short simple words.
2. Use more one-syllable words.
3 Use familiar words.
4 Use personal words.
5. Use concrete words.
6. Make every word work.
7. Avoid technical words.
8. Get rid of meaningless, dull, worn-out phrases.
9. Put sparkle and freshness into phrases. Give old phrases a new twist.
10. Create figures of speech.
11. Use ultimate phrases.
12 Use short sentences as an aid to clear thinking.
13. Make frequent use of very short sentences
14. Make sentences active.
15. Use short, simple paragraphs.
16. Use very short paragraphs for variety and emphasis.
17 Use one-idea paragraphs.
18 Use one-viewpoint paragraphing
19 Use paragraphs for action, impact and result.
20 Write to one person, one human being.
21. Talk to that person right where he is.
22 Talk to that person in his own field of knowledge.
23. Work with one basic idea
24. Write with one viewpoint.

All of the above-mentioned are useful skills for a journalist who would like to convey his message to an audience. However, an educational journalist need not or may not follow all the above-mentioned tricks of journalistic trade. Basically the purpose of educational journalism is not that much of shocking or surprising or exciting the readers by short crisp flashy sentences but to rouse them to deep thinking regarding issues which are vital for the society. The main aim is to write understandably and interestingly and some use of technical words or jargons may not be avoided. The idea is that news writing should not be confusing, unnecessarily ornamental and represent contradictory viewpoints. The educational journalist should have a definite viewpoint which he should communicate with directness, through a logical progression of arguments which will come together in the summary and conclusion. It implies a unity of organisation and careful attention to details. He should have the ability to visualise the end product in its completeness and lucidity.

While talking about the qualification of a good journalist, Lippmann said, "I do not set much in store by capacity to write brilliantly. I do set store on lucidity, brevity and the instinct for the jagular."

Parthasarathy opined that brevity, lucidity and precision are what are lacking in the stories appearing in Indian newspapers. They are hyperbolic, exaggerated, superficial, verbose and confusing. They are clicke-ridden and in many ways dull and uninteresting".[2]

To use many words to communicate few thougts is everywhere the unmistakable sign of mediocrity. To gather much though in a few words stamps the man of gesius

Acquaintance with the House Style

Papers have specific house styles of their own. A professional journalist attached to a particular newspaper should be careful to see that he is maintaining the style consistently. This may mean using a spelling consistently Iogoslavia for Yugoslavia Regarding abbreviations or addresses two, unique house styles are developed by different magazines. Though a non-professional educational journalist is not employed by those papers, he still must know about the respective house styles to enhance the acceptability of his articles in those papers

Editing

In sharpening the impact of writing, clever editing is essential. Bad editing can take the edge out of an otherwise good news report. The basic skill in newspaper editing is a valuable asset to the communication technicians

It improves the meaningfulness of language, safeguards the accuracy by checking carefully the facts, the sources of quotations, etc It may be necessary to improve the articles by deleting portions and suggesting appropriate titles. An editor requires a sense of balance in all the decisions he makes. He carefully focusses on the requirements and limitations of the readers. An alert mind and an even disposition and a sense of continuity of news are real assets to him. He is a dealer not only in words to ideas but a dealer with people. The idea of editing is to make the news more meaningful for its readers. An old and good newsroom slogan is, "Never understimate the intelligence of your reader, never overe-estimate his vocabulary "

Educational journalism is a profession and it should be accepted as such. It implies standard principles should be followed. The above-mentioned are some of the needed skills for educational journalism. They are not exhaustive or even imperative. But these are suggested beginner's skills. In a preface to H.W. Stonecipher's book 'Editorial and Persuasive Writing', G.N. Gordon wrote. "One matter of transcendental importance however remains the pivotal and bitter truth, nobody can and will write or speak forceful and meaningful words of editorial opinion in any context unless he or she knows precisely how to do it".

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Needed Skills for Writers on Education

T.S. THIRUMALAIVELUE

THE Indian educational system today calls for, from the teachers, greater efforts for realizing the objectives of educational goals than what our ancestors had done becuase science and technology has made many break throughs in all the fields of our thinking and doing. The teacher faces many challenges for building up a new era of education in India. The Indian social life changes rapidly as its economy moves fast One such challenge for the teacher is educational journalism. The teacher may make use of this media for airing his grievances about the lack of facilities, inadequate environment and unstudious climate in the field of educaiton. He may also try to expose the understanding of educational objectives and economic insecurity that his fellowmen face in their day-to-day lives.

If we accept education as a trade, then educational journal is a trade journal In such a journal, news pertaining to education and features on several aspects about the functioning of education can be published

People who contribute news for publication in an educational journal may be called reporters on education and those who contribute feature articles and write-ups may be termed as writers on education. These writers and reporters, however, are called educational journalists. They may both write and report on matters relating to education.

Only men and women who are talented in their fields of study can shine as good writers and good reporters on education becuase the range of the work of a journalist is as wide as the world around. Mere knowledge of stenography (the primary need for a journalist) or of English cannot work in this field A journalist on education does more than what he writes and reports as he socializes educational problems, educates the masses on the needs of education and makes them realize the educational objectives and their duties and responsibilities. He interprets, comments and criticizes educational goals. He needs skills in order to achieve his end and to make his job more rewarding and fruitful.

Skills Needed for Writers on Education

Basic Needs

A writer on education must be a proficient scholar, an all-rounder having sound mind in a sound body. He must have pleasing looks and cordial manners, grasping power, alert and inquisitive brain. He must be a graduate and must be knowledgeable in history, economics, politics, sociology, sciences and arts to make his way up in a world that is increasingly demanding competency in his field of interest.

Special Needs

Skills in the Three R's. A writer on education must be competent in the three R's i.e. reading, writing, and arithmetics (calculation). He must be a fast reader, a rapid writer, a fluent speaker, a careful listener and a quick assessor of things. He must build up his vocabulary, improve his pronunciation in his mother tongue, regional, national and international languages if he has mastered any one of the languages.

Language Needs He must be conversant with the lexical and grammatical items of the language media in which he writes his articles in order to achieve brevity, clarity and accuracy in his writings He must also be very much familiar with proper registers, jargons, slangs, colloquial terms and dialects of the region and must be able to convert them into fashionable and standard language. He must have a sound knowledge of the classical root and literature of the language.

Knowledge in Standard Language 'and Multi-lingual Skill· As envisaged earlier, language skill is a must for a writer on education It will be useful if he masters an international language like English English is, in more than one way, a helping language for learning and interpreting western thought It helps much to acquire the ever-expanding knowledge of science and technology. Besides English, the writer on education, if possible, may have a working knowledge of French, German and Russian as these languages are much more influential and popular in the Pan European circles

A writer on education should not be gloating over his scholarship in his mother tongue. He must, if possible, be a scholar in it and master at least one or two regional and national languages. Such language attainments help him to study and assess the local educational conditions and needs without (wasting time in) translation and interpretation.

A writer on education must possess technical skill such as type-writing and drawing pictures and sketches. Periodic training in the art of writing various articles, feature-writing and forwarding information to the editors of the journal of education must be given to him. Seminars, symposia, workshops, inservice programme, etc. must be organised to train the writer in the attainment of language skill and in using it for his writing. He must acquire sufficient skill in functional grammar which will relieve him of a lot of burden in his expression in the particular language.

A writer on education must be a skilled translator. He must translate very quickly facts and figures from one language into the other, analyse and interpret them very fast. Such act on the part of the writer will minimise the burden of employing an official or semi-official translator for translation purposes which will not be a time-honoured work always. Along with this, he must have a working knowledge of the theory and practice of statistical computations in order to understand matters relating to statistical analysis better And if it is necessary to compute his own statistical data, he must be trained in computation work also.

Library and Reading Room

A writer on education must make arrangements for a library of his own at his home with a reading room attached to it. He must store books which help him in his field of interest and subscribe to current national and international magazines on education for ready reference. To study the latest trend in journalism, he must acquire books and periodicals on journalism as well

Expertise Needed

Writers' on education must be experts or specialists in their field of study as educational writing, except educational news, is feature writing. Such experts must be classified as writers on Science subjects (Physics, Chemistry, Biology, and so on), Technical subjects (Hydraulics, Water management, Power generation, Coalmining, and so on), Humanities (Economics, Commerce, History, and so on) and Arts subjects (Languages, Fine Arts, Sports and Games, and so on). Indepth specialisation can all the more be welcomed to contribute special feature write-ups.

General Needs

The writers on education need skills which are not always insisted on for common-place writers The specialists or experts must be asked to qualify for language skills through special programmes. It will be useful if they graduate themselves through private study, in the language in which they offer their writings This is quite inevitable as a magazine or a journal in education is meant for all to read, from the layman to the elite in society so that the laymen and elites will understand and appreciate alike the current trends in the field of education.

A writer on education who is not an expert but who wants to contribute something in education, must, before submitting his write-up for publication, consult an expert or a knowledgeable source Pretension of knowing the subject should be avoided completely in the extract of one's own writing.

A writer on education must possess an up-to date knowledge of the subject in which he writes. He must be conversant with the latest developments in his subject. A serious writer will always subscribe to journals of his choice and seek the help of experts to clarify doubts in case they arise in the process of his writing Humility is an important factor for a writer on education because learning is vast and man learns only a little in his life-time

In case the writer is a novice and not at all trained, he must answer the following questions with regard to his writings.

1. What is the market value for the article?
2. Who has the necessary expertise on the subject on which the article is to be written?
3. How many words are needed for the write-up?
4. Is a diagramatic explanation possible?
5. Is statistical computation for the data collected sufficient and can evaluation be attempted?

He can get the help of an expert, explain his purpose, get him clarify the complex area of information, work on the preliminary draft and have it cleared finally by an expert

Short Notes

Writing short notes for research reports is a needed skill for a writer on education Short notes are intended more to inform and educate people than to define the full extent of research done. In fact, a round-up report on research is comprehensive in its approach and detailed in its analysis. Besides, a short note is less pretentious always.

Brevity and not surfeit of facts is another virtue of writing on education Words must be expanded in order to explain the meaning. Mere wordiness in a writing is different from detailed information. Verbious conceptions must always be avoided.

Writing for Educational Documentaries

This means writing for Radio, TV and Films. The following points must be borne in mind by a writer who writes for educational documentaries:

1. More formal writing is needed
2. As far as possible, use of pronouns must be avoided.
3. He must be specific with regard to numbers For example, he should not write 'a million' but "one million".
4. As far as possible he must avoid qualifying statements.
5. The latest development in the field of interrest must be portrayed. It creates a touch of immediacy to the cult of writing. Detailed stories, wherever necessary, must be attempted.
6. Alliterative writing must not be used frequently Puns and tongue-twisters can confuse and may cause the readers a sense of dullness in reading.
7. Transitional words like "However" and "Anyhow" should not be used.
8. There are no restrictions for using abbreviations
9. Repetition is a curse of writing.
10. Pronunciations must be understood in an easily understandable phonetic form. (e g. Gita must be pronounced as Geetaa, Vidya as Vithyaa)

11. Reading must be pleasant and should not weigh upon time

Feature Writing

A feature is a special article or cover story written in a newspaper, journal or magazine A feature does not speak of the nature of the article but speaks only about the quality of the article Timelessness is the attraction of a feature article. Therefore, a writer on education must bear in mind the following points while writing feature write-ups

A feature to be read and appreciated must have immediate reference to what the reader knows descriptively. A feature carries new information.

A feature can be written on any subject.

The news story and feature story can be distinguished in the following example:

News Story· Dr Sivaramakaranth has been awarded the Jnanapith Award for 1978.

Feature Story· Who is Dr Karanath? Why was the Jnanapith award given to him? What is the source of his greatness as a writer? A discussion of the quality and content of some of his books with possibly an interview with the award winner can be presented

Every feature arises out of a news item. The free lance-writer provides the features A feature is expected to give background to the news which includes analysis, explanation and discussion There are news features, sports features, adventure features, science features, and so on. A feature is attractive if it is (1) timely, (2) written by an authority and (3) illustrated suitably.

Feature writing is an art because it is handled by an expert or specialist in his field. Such specialists and experts can be found only in the field of education. Feature writing calls for originality It should not be done on borrowed thoughts

Creative Writing

A writer on education must know the art of creative writing He must also know how to criticise creative writing if it is wanting in information

Do's and Don'ts

A journalist usually contributes both to news magazines and feature magazines. A feature magazine on education should carry write-ups on education such as reports, minutes of educational conferences, policy matters, summaries of research findings, research indicas, handouts, administrative problems (relating to amenities) and the problems pertaining to teaching and learning conditions.

A writer on education must be more watchful as to the matter of factness, time and precision in his writing. The question of wasting human energy should not arise in the writings on education

Viewed in this context, the writer on education should be more responsible than others as education is a vital force in a country's socio-economic background. Therefore, a writer on educaiton should follow some do's and don'ts in his writings

1. He should not write for his pleasure. He should not impose his opinions on others as opinions always differ and no two opinions can be alike Also he should not adopt writing as an avocation to earn his own livelihood. But, he can bring out useful thoughts on educaiton through observation He can analyse the views of other men too as each man tends to think differently over a particular topic.
2. A writer on education should always choose origional topics, the topics which were not touched up by others. He should also avoid topics which are commonplace and which have already been covered by mass media.
3. He should think of the history of education, the lives of great philosophers like Tulsi Das, Vyasa, Thiruvalluvar, Socrates, Aristotle and Plato. He must study the aims and objectives of great philanthropists, psychologists and social workers on education. Then, he should build up his theory, keeping in mind the educational requirements of the present, becuase education grows up when the moral and culture of a society grow up and develop.

The growth and development of a society calls for many challenges and unless they are met, education becomes a waste in that society.

On the other hand, education is the root of national life If it deteriorates, the nation is bound to perish

4. A writer on education should foresee through his studies the educational needs of the country. No sort of suggestion, meditation and idealization is possible for him. He must be keen on bringing an educational revolution which was done by Vivekananda, Mahatma Gandhi, Lord Macaulay and others.
5. An educational writer should take happenings in the field of education in their own contexts. He should learn through dialogue the cultural, social and political ills in education As an essayist, he has a moral obligation to propagate the ideals of decency, equality, liberty and justice in education.
6. A writer on education must not be a slave to 'isms' and theories His writing must be free from caste, community, race and religious prejudices. Besides, he must be active and must not be an automation of gathering and forwarding information of his choice. He must observe closely facts and figures, and experience directly their impacts. He may then support them or may stoutly oppose them, with evidences in his writings.
7. A writer on education should not always fight for unpopular causes in education. He should not portray his character and personality in his writings. If strange situations are observed in education, they should be portrayed very vividly by him.
8. An educational writer should fight for his own conviction. His conviction must be based on the problems in education such as problems relating to educated unemployed, wastage and dropout in education, reform in education, and so on.
9. A writer on education is a backbone and a nerve centre of the society because he writes not for his own generation but for many generations to come. He builds his society for a happy future. The fate of his society depends upon the quality of his writings as it fosters national traits. Therefore, he must make his readers informed of the blemishes in education through his writings.
10. An educational writer should avoid pretensions. He should not hide in the shadow of a word. He should not be mediocre and dull in his writings He should avoid sarcastic overtones He must avoid himself being a shy artist.
11. He must come forward to expose cheap publicity stunts in the field of education. In a politically corrupt society, even research institutes will not be free from this disease. The writer on education should not show fear or favour over such ills in education.
12. An edcuational writer should first concentrate on the educational needs of rural areas. He may help the nation fight ignorance and illiteracy. It is his duty to observe whether all the educational schemes of the government have been very speedily and properly implemented by the educational institutions in rural areas.

Needed Style for a Writer on Education

Style makes distinction in one's writing. It makes a writing good and full. It is also a skill that a writer on education must learn to practice in his writing.

Style is putting together of ideas in the correct and orderly form. The composition of an essay (Title, Sentences, Paragraphs, and so on) must co-exist with the elements of style.

Style also depends upon the personality of the writer. Style is inevitable for a good writing as it helps us to adopt precision and clarity in our writing and also helps us to make our meaning clear to the readers.

Style is also intimately connected with the life and mode of thinking of a given civilization at a given time and it can have no fixed form But the advancement of science has dictated objectivity in expression and lucidity in style

There is a general classification of style into three elements They are intellectual, emotional and aesthetic elements The intellectual element calls for precision, clarity, economy and harmony between thought and expression Almost all writings on Science and Technology must be based on this element The emotional element brings the thoughts clearly before the reader In it lies the force of the writer, the power of his suggestion, his capacity to move the reader by his writing and to make the reader share his state of mind. Here the style rises from a mere science and becomes an art This element can be used for writing essays on humanities

The aesthetic element comprises the artistic grace of style which gives immediate pleasure Its musical quality, its picturesqueness, its polish, its perfection of form, and whatever else gives it beauty and charm This technique can best be used for writing on arts subjects.

A good style combines all these three elements A writer on education must know the importance of these elements of style and try to adopt them in his writings. Besides, he should bear in mind the following special notes as well

1 In his writings he should avoid obsolete phrases, jargons, cliches and slangs.
2. Idiomatic expressions can be adopted only for essays on language and literature and not for science and humanities which call for objective type of expression.
3. A writer on education should not follow a personalised style. A common and acceptable style for educational writing must be evolved and followed by all
4. A writer on education should have a working knowledge of etymology, idioms and phrases of the language in which he wishes to write.
5. Whether he writes for science, humanities or arts, he must use only periodic style and in no circumstance can he use loose style which makes reading dull and confused.
6. A writer on education must take care of case-endings, mood and transformation of sentences. Unless called for, hypothetical, parenthetical and elliptical statements and figurative style must not be used
7 Punctuation marks form part of a good style. Most of the writers do not know that punctuation is an essential aspect of good writing. A writing without proper punctuation marks mars the very concept of the main theme. Therefore, a writer on education must take care of the proper use of punctuation marks such as comma, semi-colon, colon, full-stop, brackets, inverted commas, allipses and parenthesis.

Conclusion

Thus it has been observed that a writer on education needs skills which are varied and many. Such skills are not normally expected from other journalists

The skill of writing includes the skill of following a certain style as well In addition to the form and content of a writing, style adds decorum to the writing A well-thought-out and planned style enriches the matter and manner of an educational writing. This has been very clearly outlined in the last phase of this essay.

In short, it should be borne in mind that the basis of a good writing on education is clear thinking. An educational writer should avoid clumsy and obscure constructions, long unwieldy sentences, faulty grammar and over-weighted images. He should not copy the style of other writers nor could he emulate their methods of writing Out of his personal scholarship and guidance, he must evolve his own style. In course of time, his style will emerge as an elegant personal style. Above all, a writer on education needs the best quality of a detective, the attitude of a good psychologist and the argumentative power of a lawyer. Rumours and hearsay evidences are enemies to him. He should not rely on them.

Educational Writing for Children

R.K Murthi

EDUCATIONAL journalism may appear to many as an oddity. They may hold on to the view that journalism is the label for dissemination of information and information is education, therefore, the prefixing of the adjective 'Education' to 'Journalism' may look to them to be an obfuscation. However, this criticism loses its edge once they learn the subtle difference between day-to-day journalism and educational journalism.

The essence of journalism is good reporting, done with the minimal lapse of time. Rightly has it been defined, 'Journalism, at best, is a quick glance at history on the run.' That explains why day-to-day journalism fails to inform fully There is an avalanche of new events, fresh incidents, novel changes, unexpected developments. Events of the day before, reported with such fanfare, seem to lose their appeal overnight. The Sub Ed struggles with the 'current news'. He tucks away, if at all he feels inclined to do so, the dominant news of yesterday and its follow-ups in remote corners of the newspaper. More often than not, he simply has no space for what had been news, and chooses to give it the skip. No wonder, newspaper readers find their information, if they follow only the news items, skimpy, patchy, full of holes Rarely ever is a news report, even a very significant one, followed through regularly

There can, therefore, be no quibbling about the need for educational journalism (EJ). Even newspapers have realised its significance and devote enough space to savour important news at leisure The writer goes deep into the subject, culls the bits and pieces of information which have appeared from time to time, comes up with a complete picture of what had happened. Often he puts in his own views, indicates what he thinks of the totality of the event. There are thus two elements, even in this journalistic exercise in EJ. There is the factual element, which cannot be altered and therefore should be accepted without questioning. There is the interpretative element, with its subjective undertone which has to be taken for what it is worth. The intelligent reader knows how to work through such articles. He knows where to draw the line. He takes in all that is fair, evenly poised, not seen through jaundiced eyes. Even though a little amount of circumspection is necessary, even when a reader goes through articles in newspapers and journals which come under the heading EJ, if he is to gain maximum benefit. For the purpose of EJ is to present the facts clearly, without ambiguity, and to provoke independent thinking and to rouse natural curiosity. And, curiosity, mind you, is the starting point of many new ideas, original innovations, creative outputs

The field of EJ is very vast. There is no subject or theme which does not come under its purview. The style and content of EJ may vary according to the age, intellectual attainment and social background of the target group. The technique of narration or the media of projection may vary. However, the basic element of quality of EJ remains unaffected by these outer forms. It does not acknowledge any limitations drawn on the basis of age. Of course, the style has to be simpler and easy to follow when EJ is aimed at children. However, good EJ has an appeal which transcends age. I say this after making a suvery of adults who spend hours reading magazines for children and find the exercise rewarding in every way. They also admit that EJ, which has become the main objective of magazines, when mixed with entertainment, does much to develop the mind of the child, to open new vistas for him, to familiarise him with what he does not find normally in the school curriculum, to aid him in discovering his latent talents. Catch'em young. That is and ought to be the central thrust of EJ. Once a child gets to feel the pleasures of EJ, there is nothing that can hold him back. And his scholastic attainments are bound to be more balanced, more wide, more penetrating, more catholic.

As mentioned earlier, good EJ knows no limitations. It has an appeal for everyone. Once this is conceded, we can proceed to deal with EJ for the young, how it has developed in our country, what is being done and what could enrich the field, for this will apply equally to EJ for older people.

EJ began in India, with the first publications. However, it was Aunty Wendy of Illustrated Weekly who served the cause best in the formative years. A section of the weekly was exclusively reserved for children. It provided interesting information and write-ups in a style, simple and direct. Children responded to EJ with great enthusiasm. For EJ gave them a peep beyond the world of textbooks. They learnt about people and places, about interesting things and incidents, of games and great sportsmen, of history and history makers. It was fun learning through EJ. No examination casts its ugly shadow. That was reason enough for the column to become popular. When Aunty Wendy invited children to participate in competitions, there was great excitement all around. Through these competitions, many children sensed their natural proclivity. Some of them took to writing like fish to water. There were children who could weild brush and ink, or crayons or water colours to capture natural scenes or to draw profiles of people. The overall impact of EJ for the young was a sort of an information explosion, and immense benefits were derived by children.

The magazine section of the Sunday Standard (Now The Indian Express) opened up a new channel for children through the Young Pals' Corner. Regularly, there were write-ups on topics from history or science or sports or discovery or adventure. I recollect, with nostalgia, the many contributions I made to this coulmn, the warm response I received from children. The deletion of this column from the magazine section was a reversal of the good trend. And I still cannot find one valid reason for this move.

However, one reversal does not mean the end of the world. Major newspapers, including The Times of India, The Hindustan Times, The Newstime, The Deccan Herald and The Statesman, have space for EJ to cater to the needs of children. The language press (I know of Malyalam and Tamil language papers) have taken to EJ for children with alacrity. There are also journals, specially catering to the needs of children, in English (Children's World, Target), and in Indian languages.

EJ for the very young (age up to 8) offers a real challenge to the creative of the writer and the illustrator.

Many writers take to verses to inform and educate children through EJ. Sir Isacc Watts noted, "What is learnt in verse is longer retained in memory and sooner recollected." For instance, EJ tries to tell the child about idioms in the English language and takes up the term, 'Fighting alike Kilkenny Cats.' While explaining the idiom, it would go a long way to stimulate the child if an interesting verse is inculded. The verse reads: "There once were two cats of Kilkenny/Each thought there was one cat too many./ So they fought and they fit/ And they scratched and they bit/ Till, excepting their nails/ And the tips of their tails,/ Instead of the two cats, there weren't any."

The child can get hold of the fact that the moon shows the same face, all the time, to the earth, by reading a verse which appeared, years back, in a journal. It reads, "Oh Moon! When I look upon thy beautiful face/ careering along through the boundaries of space/ The question has frequently come to my mind/ If ever I will gaze on thy glorious behind?"

A.A. Milne chose verse to teach the very young how to count up to six. "When I was ONE/ I had just begun / When I was TWO/ I was nearly new./ When I was THREE/ I was hardly ME./ When I was FOUR/ I was not much more./ When I was FIVE/ I was just alive./ But now I am SIX, I'm as clever as clever/ So I think I'll be six for ever and ever." An article on Eskimo is likely to leave a lasting impression on a child if it is backed by the verse, " Eskimo fare is nice, they say,/ Eskimo fare is good / Blubber and oil and fish, they say/ Make healthy warming food./ Eskimo eyes light up, they say,/ When there's cod liver oil for tea / If that is so, then all I can say/ Is, they can have my bottle free."

The above examples give a cue to EJ for the young backed by verses. There are many practitioners in English and Indian languages who have adapted this style of EJ to bring knowledge to the very young

I would refer here to a poem by J. Pope, which is a brilliant piece of EJ for the young it tells them about noise." I like noise/ The whoop of a boy, the thud of a hood,/ The rattle of rain on a galvanized roof/ The hubub of traffic, the roar of a train,/ The throb of machinery numbing the brain,/ The switching of wires in an overhead tram,/ The rush of the wind, a door on the slam/ The boom of the thunder, the crash of the waves/ The din of a river that races and raves/ The crack of a rifle, the clank of a pail,/ The strident tatoo of a swiftslapping sail,/ From any old sound that the silence destroys/ Arises a gamut of soul-stirring joys / I like noise " How easily the poet teaches hildren the different words which depict different sounds? How easy it is to use EJ to tell the child HOW ANIMALS SPEAK. I spun some verses to teach young children how to describe sounds made by animals and birds. "The cheeky little mouse/ Runs all around the house,/ And when it wants to speak/ Just lets out a squeak " There is one on the mew of the cat. "The big black cat/ Catches a rat/ And tells the news/ Through its mews." . Yet another which tells about the moo of the cow. "I love/ The cow;/ For when I coo/ It says, 'Moo.' "Everyone knows that the duck clucks. "Cluck, cluck/ Clucks the duck/ Can the batsman's duck/ Say, 'Cluck, cluck ' "

It is evident that EJ is served well by verses when the target group consists of children. Children also love to read write-ups which are simple, which are direct in their appeal, which stir their natural curiosity I remember the excitement which filled children when they read a very interesting article on ANTS, prepared by my friend Geeta Dharmarajan and published in TARGET. I give below an extract from the article

> **Have you watched an ant busily going somewhere? It seems to know exactly where it's going, and what it's planning to do And so it does . Ant's nest may be in the garden under a stone, inside an anthill or under your kitchen floor. But wherever they live, all ants share the job of keeping their community fed, sheltered and safe. Ants' nests are full of winding tunnels and rooms, each for a special purpose .. they even have a burial room for their dead "**

Geeta also gives several amusing facts which fascinate the child. She says, "An ant always carries a comb! It's attached to its front right leg. The comb is used to clean the antennae from base to tip. Later the comb will be cleaned by drawing it through the mouth ... Ants have two stomachs. One is the 'crop' that carries food for the community. The ant has to bring up this food whenever the community demands it The other stomach holds and digests the ant's own food. A valve lets a little food from the 'crop' to go into the stomach for the ant's use... Many small beetles live in ants' nests. Ants really look after them and pet them by licking the hairs of these beetles Some scientists think the beetles are ants' pets. But it may be that ants keep them only becuase these bettles give out a sweet liquid " The illustrator Suddha catches the profile of ants which go with the words . ACCOUNT-ANT; JUBIL-ANT; INTOXIC-ANT, ELEPH-ANT; MILITANT; LIEUTEN-ANT; SERV-ANT; BRILLI-ANT; RELUCT-ANT; and ANT-ELOPE.

Such informative articles, certainly, find favour with children. Why, even grown-ups find EJ stimulating. Yuva Bharati is carrying a series of articles titled VEDIC MATHEMATICS which brings out the ease with which calculations can be made. U.C. Chopra, a naturalist, is doing commendable work in bringing to children details about different kinds of animals and birds, their habits, their distinct characteristics, and illustrates his articles. An extract from his article on the tailor bird reads:

> Its nest is usually made by sewing together two or more leaves of a broad-leafed tree so as to make a sort of a cup or a bag. The bird uses its sharp beak as a needle, the thread being pieces of cotton, cobweb strands, silk from coccoons and jute fibres or wool... The nest is usually suspended near the ground.

This brings to my mind my own experiment to tell a child about light and how light gets refracted by dew drops. Titled RAINBOW IN THE GARDEN (Target July 82), the text reads:

> Mamma knows nothing.
>
> I ask her, "Want to see rainbows.. rainbows in the garden?" She stops cutting vegetables. She waves the knife up and down. She smiles and says, "I am busy, Lata! This is not the time to ask silly questions. Whoever has heard of rainbows in the garden? Rainbows stay in the sky. They don't come down to the garden."
>
> Pap knows nothing.
>
> I ask him, "Want to see rainbows .. rainbows in the garden?" He pus down the newspaper. He looks at me and says, "Lata! let me read the paper. Don't disturb me with your funny questions. Whoever has heard of rmbows in the garden? Rainbows stay in the sky. They don't come down to the garden."
>
> Shankar knows nothing.
>
> I ask him, "Want to see rainbows.. rainbows in the garden?" He laughs and laughs, claps his hands and shouts, "Lata is mad. Really mad. Whoever has heard of shouts, "Lata is mad. Really mad. Whoever has heard of rainbows in the garden?" Papa does not know. Mamma does not know. Shankar does not know. Only I know.
>
> Yes. There are thousands of them. A rainbow in every dew drop. But no one knows. Not Papa. Not Mamma. Not Shankar. Only I know of the rainbows in the garden.
> Rainbows in the dew drops.

The purpose of the above piece, when I conceived it, was two-fold. Firstly, I wanted the child to get an idea about refraction, how light filters through dew drops and breaks into the shades of the rainbow. There was only a hint that the child manages to look at nature with wonder and fascination while the adult turns blind to the charms of nature.

Many are the marvels of nature. My friend Dilip Salwi has been playing a major role in bringing science to children. A scientist working with SCIENCE REPORTER, he writes regularly in magazines for children, tells them about robots or computers or space travel or moon probe. Childrens' World often carry articles on stamps, sports, history, real adventure, persons, incredible facts from nature. There are also articles on places of tourist interest. Children find the 'DO IT YOURSELF' guides which the magazines publish from time to time. Quiz and crosswords are two other tools through which EJ finds wider appeal.

Good illustrations are essential when EJ is meant for the young age group. Luckily, there are competent illustrators, like Subir Roy and Jagdish Joshi and Suddha and Manjula Padmnabhan, to name a few, who have been actively associated with EJ. The captivating illustrations which they turn out leave a lasting impact on the child. More often than not, the child first gloats over the illustrations before turning to the text. For, the visual impact, if effective, is much more lasting than the imprint of words.

For the older children, the teen-agers, EJ has to have a different approach. The target-group consists of children who have gathered much knowledge and are ready to come to grips with more complex or difficult ideas. They have already received the basics of knowledge. They are waiting to increase their knowledge, to enlarge their understanding of the world. They are ready to read a lot about science, history, geography, people and places. They enthuse with the write-up on the Otter (Jeremy Harris in Reader's Digest Nov 1969).

> It is in the water that the wild otter shows up at his most skilful. All his clumsiness ashore is transformed into graceful water acrobatics. He can twist, somersault, or dart arrow-straight after his prey, his progress marked by a line of surface bubbles, as he sparingly dribbles used air from the corners of his mouth.
>
> Ears and nostrils closed by a system of built-in valves, he can swim underwater for 400 metres at a time, propelling himself with undulation of the body and tail or spurting with smooth, powerful storkes from the webbed feet.

J D. Radcliff wrote a series of articles detailing the significance of the parts of the human body. Even today these articles are lapped up readily by teen-agers and adults. An extract from the article, I AM JOHN'S FOOT, reveals how Radcliff has been serving the cause of EJ.

> John has no idea what a complex piece of machinery I really am... Through the intricate interaction of my 26 bones (one-quarter of all John's bones are in his feet), 107 ligaments and 19 muscles, I am balancing a six-foot, 13-stone pile of flesh and bone.
>
> Try balancing anything that size on an area no larger than the soles of two feet! It's a tricky business . It would take a good-sized computer to handle a balancing act like that .... Walking is even more complex. ...Let John walk down a pavement at a comfortable 100-steps-a-minute pace That means I am hitting cement with a 13-stone jolt 50 times each minute. ...In his lifetime, John will walk something like 65,000 miles— which means tens of millions of jolts for me. The wonder is that I don't collapse completely.

The older children find the information which is packed in the articles appealing. Facts and figures add to their knowledge. They take on details about freedom fighters (My young friend Geeta Sekharan has been running a serial in Children's World which is very popular), find the reports about Hannibal's crossing the Alps or Alexander's quest for world conquest or Napoleon's achievements stimulating. They are willing to read about any subject under the sky.. be it adventures, like the sea voyage of Colombus to discover the East, ending up in America; or Scott's journey to the Pole; or the Indian expedition to the Everest or the Antartic (I reported this in Children's World); or journey to the moon; or unmanned space probes of Venus or Mars or to stars beyond the solar universe; or our preparation to greet Haley's Comet; or the danger which man faces from nuclear weapons. The teen-ager is old enough to realise the amount of labour involved in creating a work of art! He finds the unique trail of scrivce by Baba Amte (who serves the poor affected by the dreaded disease leprosy) or Sunderlal Bahuguna (who has been fighting the battle to save our environment, to avert ecological imbalances, through his Chipko Movement) or Dr Sethi (who has come a great help to those who had lost their limbs. There is Sudha Chandran, a young eighteen-year-old who lost her legs in an accident. She was an accomplished dancer The loss of legs was a serious blow to her plans. But she revealed immense strength, found a new life with the help of Dr Sethi, and within three years have gained enough fluidity of movement to dance on her artificial feet. No mean feat, that). The teen-ager wants to read arm-chair travelogue which gives him an insight into the pleasures of travel Articles on art and literature add to his fund of knowledge. EJ, for the older group of children, thus, has a wider range. It is almost akin to EJ for older people too. And as the teen-ager moves to more serious articles, more complex subjects, he develops a higher sense of humour too. He begins to enjoy the fun that one can get from words. I ran a series of articles in Yuva Bharati titled FUN WITH WORDS, which was well-received by the readers

The prime of EJ is very clear. It has to augment the curriculum, act as a sort of knowledge bank to which the student can turn to satiate his innate curiosity or to gain new insights. There has been an attempt made, in recent times, to serve EJ through school or college magazines which serve, in some ways, like house journals of professional bodies or industrial houses. The school or college magazine gives details about all the activities of the institution. It carries details about the achievements of the students in various fields, scholastic, sports, fine arts including painting, sculpture, painting and music and dramatics. The students, who feel the itch to write, get a chance to flaunt their creative outputs, to find delight in getting published. The magazines, thus, act as the training ground for future writers, journalists or illustrators or photographers. The students who are actively involved with its production also get the feel of how a magazine is produced, what inputs go to make it a success, how information has to be presented.

It must be admitted that the quality of the magazines published by schools and colleges is yet to gain the standard needed to make them really effective. The reasons are not far to seek. There are very few teachers who have clear idea of how to go about publishing a magazine. The involvement of some is the area of operation of the reporter, where he gathers or collects materials for his educational writings. Reporting is no recent art It belongs to the time when human society was hardly organised. Existence of some form of human habitations was reported through certain indications Languages developed and along with it developed the reporting system Today we have reporting in its most modern and most effective fashion with its efficient and effective communication. Education reporters are specialists well versed in the theory and practice of education. They confine the field activity to the various sectors of education.

Educational Reporting and Schools

It is suggested that in making educational journalism as discipline, schools should·

1. Stress more imaginative and varied types of report writing.
2. Develop higher-order thinking skills by having students repeatedly organize their thoughts, offer points of view, and defend their positions
3. Teach report writing strategies, i.e., write-edit-rewrite
4. Emphasize writing and reading outside of school, since findings show that students who read more at home and do regular homework are better writers.
5. Discourage negative comments, or focus on errors and stress positive writing methods, being enthusiastic about clarity and consistency. This will lead to an overall positive attitude toward the skill.

Report writing is a skill important in itself. It trains them to use the language effectively. If the students have clear and exact ideas, they will have less difficulty in finding the right words and the correct forms to express those ideas. The best subjects are those which reflect the life of the educational institutions and their practice in society The teachers also should be realistic in their expectations. They must not expect their students to write the educational report like the masters of English language. They should appreciate whatever good is found in their ventures and encourage them to improve upon them because every attempt has some room for improvement The first step towards improvement is to find out the weaknesses. He may ask questions like: "Are there too few ideas here, or is the expression too vague and inexact? Are the ideas too general and sweeping and not detailed enough? Does the thought jump from fact to fact without any understandable connections or logical sequence? Are the ideas good, but jumbled in the wrong order?"

The teacher while correcting their written report should examine the following aspects: Grammatical correctness, continuity of language and thought, clarity of language and relevance to subject. These are essential elements for improving the student's reporting skill.

There is a vast scope for reporting practice at higher levels of learning as well where students are taught various stages of collecting and organizing information, describing events and preparing reports and studies. They must be encouraged to express themselves without inhibition, and to report free from the fear of criticism.

Qualities of a Good Reporter

A successful educational reporter possesses the following desirable qualities.

1. He is dynamic and tied up with "fresh reported events", giving new educational information and details of future plans.
2. He has a thorough knowledge of his job. He is aware of the areas he has to move in.
3. To the news media he has to fulfil the following obligations with regard to providing educational news or information :
    i. Important educational events taking place.
    ii Educational development plans.
    iii. Movements of educationalists, psychologists.
    iv Announcement of educational policies by Government.
    v. Unusual happenings in educational institutions.

vi. Educational thought.

vii. Since the newspaper caters to the demands of the people, the reporter has to provide information meaningful to its readers.

viii. He selects and provides information that affects many, whether trivial or great.

ix. Timeliness is another element that the reporter makes by which the educational news go quickly

x. "Hot" burning news is more acceptable than 'cold' news. He provides the report, which is informative, instructive, associative, recreational and motivating.

xi. He develops an independent and impartial way of reporting educational news. While giving an account of an educational institution's progress he needs to be objective, impartial, correct and associative. He may not afford to give his own impressions of good or bad conduct. Similarly, progress or no progress, intelligent or dull, he has to give his report keeping in view the overall assessment of the people's progress made by all the teachers and in all the spheres of school activity.

xii. The aim of the reporter need only be directed towards correction and improvement in the pupil's all-round development and towards associating all the concerned forces controlling human progress and prosperity.

xiii. To be a good reporter, what one needs is common sense and command over language.

Types of Reporting

Educational journalism includes interpretative, investigative as well as depth reporting.

Interpretative Reporting

Suppose a reporter wants to write on the working of the semester system in colleges. For this, he needs a strong background of the subject. He should be careful to check all sources of information before writing the report. If there is any doubt regarding facts, it is better not to report than to give a wrong interpretation based on incomplete data. A wrong interpretation is worse than no interpretation. This kind of reporting offers him an opportunity to give his opinion in educational news columns. Conscious effort should be made to keep personal bias away from the report, making it based on logical arguments, sufficient background knowledge and analysis of facts.

Investigative Reporting

The mass media men in India have become more a type of investigative journalists writing 'newsy' aspect of reporting the various internal politics in the Government and universities. It is a novel way of reporting the events.

Educational news items, by and large, need some investigation. Investigation improves the quality of the report.. "Bonded labour in classroom" was an investigative report found in "The Hindu". Here the investigator should have taken a lot of planning in the preparation of the report, which analysed the bad service conditions of teachers working in various colleges of Tamil Nadu. Such investigative reports need pains-taking gathering of facts over weeks or months. sometimes its publication may lead to litigation. The reporter, after careful planning and organized efforts, arrives at the results which uncover something wrong in the educational system. Investigative reporting is a major exercise involving a lot of funds and many dangers. Before they actually undertake the investigation, they should consult the editor for its viability and worthwhileness. The "take off" of the project depends largely on the risk-taking on the part of the editor or owner. Scanning the data or information available, he analyses the material and proceeds further. He finds relationship in the gaps or the disjoints by way of conducting interviews and administering questionnaire. The facts are interpreted and conclusions arrived at. In the case of newspaper, they have a separate team o educational reporters headed by a senior member of the staff for investigative reporting. They should be aware of the various problems confronting the educational institutions. Major sources of these investigations are Government reports, reports of various educational committees and commissions, papers laid on the tables of State Legislatures and Houses of Parliament. An investigative reporter is more like a judge and not like a public prosecutor. The entire investigation is done on a scientific basis, where the hypotheses are tested and the acceptance or rejection of the same is made on the basis of the interpretation made.

Depth Reporting

Here the reporter goes deep into the subject. It is also called "in-depth reporting . the reporter tries to cover all aspects of the news and investigates as deep a possible and interprets facts thus gathered so that the common reader understands them. This facilitates effective communication of information. The reporter gives background to a problem and plays up a human interest angle to improve readability for the benefit of the layreader.

Conclusion

It is clear that educational journalism can be widened in its scope for vocationalising formal journalism and developing it as a core and vocational subject suited to different levels of education. Special training must be given to teachers in the preparation of reports. This will enable them to produce good school magazines and educational reports, educational articles and write-ups based on school community activities. It is suggested that an 'intensive inservice training in educational report writing will go a long way in making this new venture more meaningful and productive to the learners of the 21st century.

While stressing the importance of educational journalism, it is not intended to differentiate or separate it from normal journalism In fact, there is no dichotomy between the two; they are only two aspects or phases of the same entity. Since the object of both is society, they have to work hand in hand, complementing, and not contradicting, each other. Educational journalism is still in its teens. When it is fully developed, it is sure to become a strengthening component of ordinary journalism. Journalists have also to contribute their share to the development of educational journalism.

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Newspapers as a Source of Education

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THE Newspaper is always with us, at home, in the study, on the journey, in the classroom, in the reading room; yes, everywhere. So, naturally it proclaims its usefulness. What we have to examine is how useful it is in our educational exploits. What can the teacher or the learner do to make use of it for definite educational purposes?

The various educational purposes incorporate a number of areas, like teachers' preparation, teachers' reference, students' study of the learning content, preparing for examination, working for assignments, reading seminar papers, participating in academic discussions etc. The thesis that newspapers can be used for educational purposes is put forward because it is a truism in educational journalism that a news item or report in a newspaper will have different perceptions by different readers. The members of the teaching community are always interested in relevant and meaningful episodes in newspapers for the sake of teaching and learning process.

The events (national, international, scientific, technical and what not) are helpful to the educator. For example, the social studies teacher has to make use of the current events occurring in the newspapers. In his teaching, as well as helping the learners in the pursuit of truth, the current day-to-day events are effective resource units. The science teacher also has sufficient materials in this news medium for his exposition of scientific truths For instance, the teacher of Life Science can easily quote from the newspaper, stories about conservation of nature, or news stories about wild animals.

As teachers, we believe in the adage, 'knowledge is power'. So we have to be sufficiently armed with certain weapons and tools. Digging up newspapers for knowledge is an interesting process. Good journalists do a lot of research when they prepare news and reports, editing, for that matter, requires enough wisdom, in retaining suitable matter and in eliminating irrelevant matter Every journalist, one who is at the desk or in the field, has to be aware of a lot of facts and figures regarding a report. As he travels around, he has to pick up all the figures he can—even the guess estimates given to him by local politicians. He has also to think and argue rationally, draw correct conclusions and be away from selfish interests. If these are done sincerely, the net effect will be a body of perfect knowledge and that is what is presented in his newspaper. And this of course is acceptable, palatable to us as 'cakes' of knowledge to be served again.

The newspaper provides different types of materials for learning and teaching. For the literary minded there are related features in a Sunday supplement. There is the Finance section, for the Economics students. There is the sports and games page for the Physical Education teachers There is coverage for national and international news and this is useful for the teachers of politics.

A good newspaper always provides material which is useful fo debates. Our students lag behind in debating skills compared to those of other interests. A good debator is always a good reader; such a person has enough food for thought and argument, in a newspaper

Newspapers, on their own, have the objective of educating the public; and some do have specific editions for the purpose. 'The Hindu' has an Educations Section every Tuesday. Other papers invariably have columns on educational and scientific aspects. A number of researcher in education do refer and quote a lot from the newspaper

Book reviews in newspapers are very much helpful in education. School and college libraries can scan the reviews for suitable books One will also get some introductory idea about certain books when book reviews are noticed. Some teachers review books and in that way educational and academic viewpoints as well can be paraded.

Teaching articles and special treatises on educational problems can be studied by teachers and students. These can be the topics for educational seminars, discussions and colloquiums., The above types of articles are mines of information The editors who pen such articles are scholars with a breadth of vision and outlook; and that would mean that their papers are not only scholastic but also experiential

Certain articles, pictures and cartoons which appear in the newspapers are worth'publishing' again and there can be flashed on bulletin boards in a school or college. The scrap book also may contain cuttings from newspapers Articles related to a topic can be published with the permission of the respective writers and editors

The newspaper thus is a veritable source of various tools, materials and incentives in education. There are newspapers and newspapers So the discerning wisdom of the educator will help him to choose the needed material. For that matter, the newspapers is a medium which wonderfully serves the cross-section of society. And when it is a mirror of the public mind, it is only fitting that the educator also should try to find out his weaknesses and foibles from a newspaper. The newspaper has a double role of educating and correcting the educator. The educational agencies have to organise the educational settings in such a way that the newspapers become a must in their pursuits and adventures as in education.

Newspaper Reading Habits and School Education

A.S. BALASUBRAMANYA

THE functions of the mass media have been described primarily to inform, to educate, and to entertain. The first and foremost duty of them is to inform the society about the various developments in our surroundings. This job has been performed by various means and systems through the ages. But the landmark achievement was the perfection of printing art in the middle of the 15th century which heralded a new era in the diffusion of knowledge. The general awakening assisted by new means of spreading knowledge marked a new era in the history of humanity.

The mass media flood the society with information providing ample apportunities to acquire new knowledge. A student today is served with latest information in various fields transmitted by the media. The technological advances in the areas of computers, satellites, laser, microchip, etc., have brought about revolutionary change in the field of mass communication. This information explosion has influenced the learning process.

The education process by the mass media is characterised by disconnected, scattered information with more emphasis on entertainment, presentation, viewpoints, etc. whereas in education knowledge forms a coherent ordered system endowed with meaning.

News is no more the monopoly of newspapers. With several bulletins over radio and television, the newspapers have to look for something different from that is already reported. More investigations, interpretations and educative teams and the areas which did not merit much attention are now getting more priority in the print medium. Thus, more and more teams which intend to educate and enlighten the readers are being published.

Newspaper reading would help the students to know their surroundings better and assist them in understanding better various subjects connected to their studies. They would function as a catalyst to kindle more and more interest and curiosity enabling them to acquire more knowledge.

The present study was taken up with the following objectives:

- To find out the newspaper reading habits of high school students of Hubli, Dharwad.
- To examine their reading patterns and subjects of interest
- To understand how newspapers help them in their studies.
- To examine the utility aspects of newspapers by students.
- To find out to what extent teachers encourage them to read newspapers and use examples from them in classes.
- To know their opinions about the newspapers in general

The data were collected through a questionnaire from the students who were selected on a random basis.

Findings

Majority of the students (73.17 per cent) read newspapers at home and very few at school (17 07 per cent) and 14,63 per cent at neighbour's house.

As far as the time spent on reading newspapers is concerned, 59 75 per cent of the students said they would spend between 10 to 20 minutes, 32.92 per cent of students about 20-30 minutes and 7.31 per cent students spent more than 30 minutes.

Although the respondents were chosen from both English and Kannada medium schools, the study shows that majority of the students read Kannada newspapers. The two most popular newspapers are Samyukta Karnataka (48.78) and Prajavani (31.70). Only 21.09 per cent said that they read English newspapers like Decan Herald. The other English dailies are read by less than ten per cent of them. The readers of Prajavani spent more time than the readers of Samyukta Karnataka on reading their newspapers.

The study reveals that though teachers did not specifically encourage the students to read newspapers, yet 68 35 per cent of the students read newspapers.

A good number of students i.e. 42.68 per cent said that their teachers gave examples from newspapers on current topics. When they were asked to recall a few such instances, they mentioned about air crash at Bangalore, drug adiction, Kashmir problem and election analysis. About 36 per cent of the students said that their teachers gave examples from newspapers only on a very few occasions.

The study confirms that majority of the teachers quote examples from newspapers.

It is very important to note here that 93.4 per cent of the students felt that newspapers should be read by the students This indicates the urge among the students to read newspapers and the recognition of their immense usefulness as a source of information.

When they were specifically asked as to what extent newspapers helped them to understand their subjects better, 56.09 per cent of them said that they helped them to understand their subjects better and 35.36 per cent of them were of the opinion that newspapers would help them only to some extent. It is to be remembered here that the fact that newspapers contribute to enrich their knowledge is accepted by the students. 58.49 per cent of the boys said that newspapers helped them to understand their subjects better to a great extent whereas 62.09 per cent of the girls found newspapers of help only to some extent. It can be inferred that boys read newspapers more seriously than girls

4 08 per cent of the students said that newspapers helped them to improve their language and enrich their vocabulary.

The study reveals that sports items are more regularly items followed by comics, cinema, news, science articles and serials among boys, whereas among girls, cinema items are more popular followed by quiz/puzzles, comics, news and sports. Sports items are least read by girls. If parents and teachers guide and encourage the students to read editorials, articles, and other descriptive items, they may cultivate the habit of reading such materials to their advantage.

The least read items among boys are editorials, features, astrology, business, advertisements, humorous items and letters, whereas, among girls, editorials, advertisements, letters, business, humuorous items and astrology are the least read items. It is very interesting to know that more or less boys and girls have similar likes and dislikes with regard to the topics of interest except sports items.

As regards preserving the articles for further use, boys pay more attention to this and keep the cuttings, compared to girls. 41.50 per cent of boys said that they had clippings of the articles for further use. Nevertheless, both boys and girls read newspapers with equal interest.

Both the boys and girls said that they did not take down points from newspapers.

The students have suggested that there should be a separate column for students. Advertisements should be less and newspapers should become cheap and language simple. They would like to have more science, sports and quiz items. Fifty per cent of spapers are very useful for about and they are the mirrors of the public opinion. A world without newspapers is like a classroom without teachers.

The Art and Craft of Book Reviewing

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THE lover of books has special reverence for a volume newly purchased at the bookstore or freshly stripped of gift wraps. If he has acquired this devotion to the printed word under the aegis of a good mother or a conscientious school teacher, he goes through the ritual of first inspecting all the physical aspects of the object, which includes at least one thorough reading of the description material, inside and out. He places the spine of the book on the table, flattens the covers, and proceeds to break in the binding, separating a few pages at a time from either end and running his finger along the seam to know in his bones that he has the feel of the book and the book has the feel of him.

Most people who read are not lovers of books. Perhaps not even a majority of those who write reviews of books. The book reviewer, to do his job honestly and competently, must get a genuine 'feel' for the book whether he runs his fingers down its seam or not Before his eyes settle on the initial letter of the text, he must attempt to know what the book purports to be and what it promises to deliver. The process of reading the book and measuring it against that promise and observing which characteristics of the work are most talking and deciding what few observations on his part will impart to his readers a comprehension of the book's work is called book reviewing. Dictionary of Literary Terms defines (book) reciew as—a brief account in which the writer gives his reactions to a book, movie, play or musical performance.

Book reviewers have been chastised and condemned through the years for supposeldy deriving sadistic glee from their swift, systematic dismemberment and interments of works that may reflect on artist's life work.

A long-standing literary myth has it that Keats was killed by an unfavourable book review; that he gave up the struggle against tuberculosis, because of despair and hopelessness over a reviewer's scorn.

Goethe, himself by no mean a stranger to writing book reviews, neverthless wrote, *'Schlagt thn' tot, den hund! Er Istein Rezensent* Beat him to death, the dog, he is a book reviewer.'

In somewhat milder tone Carlos Baker, the critic and literary historian, wrote, among those who distrust the critic as an intrusive middleman, edging his vast... bulk between author and audience, it is not uncommon to wish him away of direct line of vision.

Who is a Critic?

S.T Coleridge once remarked that 'Reviewers are usually people who would have been poets, historians, biographers, if they could, they have tried their talents at one or the other, and have failed, therefore, they turn critics. '

Many writers in the field of arts and entertainment are, indeed, people who have been poets, historians, biographers. But they have not necessarily failed. Coming over to critical calling, does not indicate lack of talent and creativity. Indeed, a reviewer who had enriched his background by first participating in the cultural world as a writer or an artist may in many ways be better prepared to understand a work and to judge it than the reviewer who springs full brown as a critic.

There are, in fact, many examples which one can cite where people who have crossed the line so many times that they are remembered equally for their criticism and for their artistic output.

Type of Book Reviewers

The reviewers are basically appraiser of fruits of intellectual labour or diviners of trends in popular culture or mere drugges dutifully reporting plot and setting and are also, above all, a select group who provides the first public response to a book. Because even though blessed with the plenty of arts, entertainment, leisure-time activity, the reading public seeks guidance and advice from the media. Critical review of books is, therefore, the hallmark of journalism.

The reviewers can be broadly classified into two categories:- (1) Hacks, who provide plot summaries or short descriptions served up in sauce of flowery adjectives, and (2) Literary craftsmen, who render serious critical judgements. Literary craftsmen write for a limited audience while hacks are forever conscious of mass taste and publisher's eye. Hack reviewers often rely on publicity handouts supplied by the publisher rather than read the book themselves. The so-called reviewers are only blurb writers. Another hallmark of hack reviewers is that they rarely write an unfavourable review Not that they lack critical standards against which to measure a book, but they are also afraid of retaliation by authors and publishers.

The later category of reviewers are cultural writers who take their cultural responsibility seriously, that is, they consider a book in terms of contemporary taste and literature as well as, particularly in case of scholarly books, in the light of past.

The Craft of Book Reviewing

Before it is probed as to what a book reviewer should do, let us have an idea of what a book reviewer should not do. In the words of Carlos Baker, a reviewer should keep away from seven deadly sins of criticism. He is worth quoting at length:

> "The seven deadly sins of criticism if we are to avoid, and not one of us completely does, require of us a constant reassessment of our motives There is, for example, the critical sin of covetousness, which may cause the critic to seek fame at the expense of the author whose work he exploits. The closely associated sin of envy leads to denigration of the works of others for the hidden purpose of self-aggrandizement. To indulge in the sin of glullony is to bite of more than one is prepared to digest, denying others the right to partake. To be lustful is to indulge in inordinate desire for the gratification of one's sense of power. The deadly sin of anger leads to the sloth of one's composure and sense of balancing during the inevitable exchanges of differing opinions. The deadly sin of sloth is to repeat accepted lies about an author or a body of work beacuse one is too lazy to dig out the truth. The crucial sin of pride is to hand down judgements with a god-like assumption of in fallability and assume, along with the robes of judge, the axe of executioner."

What makes a good reviewer is not only the personal ability to avoid the sins just enumerated, but also the ability to adapt the review to the style and the level of the medium. A book reviewer should write in the language of the journal in which the review is being published and also at the level of understanding of the readers who are the audience.

Not only this, a reviewer must ask himself what authority he has to judge a work and how he should exercise that authority because critical review, is, generally speaking, an essay and the essay form leads easily to authoritative, high sounding statements and conclusions. Therein lies the usual cause of scorn for critics, the cries of 'says who', unless the writer realises that one man's reality is not other man's reality and makes an attempt to compensate.

It may not be out of place to say a few words about the two schools of literary criticism. The academic people gave us two polarities to contemplate—authoritative criticism and impressionistic criticism. Authoritative approach is highly comparative in which a particular work is evaluated in reference to historic models which have previously been judged worthy For this authoritative critic must have considerable background preparation and exposure to the art form.

Impressionistic approach, conversely, generates an expression of reviewers' own reaction to work, exclusive of standards or procedures The work is judged on its own merits in a singular context.

Both these approaches have arguments running against them. Authoritative approach tends to remove the audience from the centre and asks the readers to standby and watch while the reviewer submits his work to laboratary analysis.

Impressionistic philosophy, on the other hand, subsitudes other personal cirterion in place of historical precedent and can lead to excesses of ego-building that are of no benefit to the artist or the audience.

It is wise to fall closer to the middle of authoritarian—impressionistic continuum than to either of the extremes The best way is to offer brief discussion of precedents, putting the work at hand into some sort of contexts, then reflecting perhaps the general casualness of letters and social behaviours today. More feel free to switch into the more comfortable personal essay style, after leading to an 'I-like-it-because' conclusion

Style

As far as style is concerned, attention is drawn towards two facets of writing which are crucial to effective criticism — avoiding the cliche and condensing description

Avoiding chiche is a simple matter or so it would seem to the beginner But the chiche is an insidious beast, lurking in shadow; waiting to take advantage of any sign or fatigue or laziness on the writer's part. Avoid plot summaries unless justified and situation calling for full exposition of the story line. Because, unless warranted, the review may look nothing but plot retold in a mocking and disapproving way, particularly when suspense is the key element.

Developing a style of writing is important in building readership but relying on a private vocabulary is not the way to go about it. Style is an extension of personality, not a by-product of word coinage or hesaurus

A thoughtful reviewer is one who learns to distinguish adjectives which merely measure or identify and adjectives which describe and illuminate. Nice, beautiful and heart-warming are excellent words but they can leave a reader wondering. Nice in what way? Beautiful of what qualities? Heart-warming to whom?

How to Do

A few words on reviewers' preparation for writing a book review. The process of thinking starts the moment the reviewer receives a copy from the publisher or magazine/newspaper editor. The accompanying letter may include information about the nature of the book Whether it is a biography, a political commentary, a fiction or a doctoral thesis, etc. Needless to say, the book must be read in entirety. Dust jacket and blurbs on the inside flap may provide useful information which may make the work of knowing the author easy.

In case of non-fiction books it is always better to relate earlier works of the author, if any. It is also advised to have knowledge of similar titles so that the reviewer is in position to place the book in hand in a larger context. It is also not uncommon these days to review four or five books on the similar subject in one go

A re-reading of the review after a rest or diversion, would give opportunity to the reviewer to improve upon the piece through lightening and eliminating redundancies by using alternate words and phrases. The credibility of the reviewer evaporates quickly when simple, easily checked, errors appear in his work, whatever the excuse.

What then is expected of a book reviewer? What treatment or behaviour a reviewer is called upon to provide to the book he reviews. The review, to be readable and sincere, should reflect sense, feeling, tone and purpose.

Sense

We use words to direct our hearer's attention but are we using the right words for the right audience? Because as Confucious said, "When what is said is not what is meant then what needs to be done remains undone."

Feeling

What is the aim of the reviewer. Is he promoting the author or satisfying his own ego by seeing his name in print? Has he shown any respect for the subject? The reviewer is not expected to churm praises like a mechanical piano but essay should depict the reviewer's concern with the art form.

Tone

Being a middleman, a reviewer has a responsibility towards the author and his audience. He is interpreting the author's work to his audience. He should arrange and use words which are milder yet truthful.

Purpose

Apart from what the reviewer has written (i.e. sense,) his respect for the author and the subject (i.e., feeling), and his treatment of the essay (i.e tone) should attempt to serve a purpose.

It is not without reason that publishers and editors believe in the importance of book reviews. A good review is expected to serve the public in many ways The primary obligation of the review is to inform, to report and to take notice of what is new. A reviewer helps the public spend limited time and money wisely. It is because of this function of the review that reviews are sometimes called 'shapping guides'. When there are money and books to choose from, the reviewer would be abandoning his responsibility, if he fails to steer the audience to uncommon, innovative and excellent.

Book Reviewing for Newspapers and Eductional Journals

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THE art of book reviewing is as old as the birth of the book. With the coming of a book out of the printing press people would read, think and react to its theme. Book reviews perform an important function not only for the libraries but also prove useful for teachers, students and scholars who enrich their knowledge. The art of book reviewing in its, modern sense is of recent origin compared to the literary criticism. While thinking on the birth of book reviewing one reminds of the history of reviewing periodicals. The early book reviewing publications are book notices or pamphlets published by the publishers of books having short critical accounts of new books. It was only in the midst of the seventeenth century when some systematization took place.

Going back past, the first important abstracting journal that came out in the form of a digest was "Journal des seavanse" in the year 1665. This journal used to carry brief information on all important new books in Europe. Another journal in English language which followed suit was "Philosophical Transactions" (Acta philosophia) brought out by the Royal Society of London In the later parts of the seventeenth and the eighteenth century, the number of book reviewing periodicals increased and they were all mostly of primitive types.

In the start of the nineteenth century real development in book reviewing took place. "Edinburgh Review" (1802) was a journal of repute which carried many good critical book reviews. Later on many good journals which joined the line were "North American Review" (1815), Blackwoods Magazine" (1817), "Westminister Review" (1824), etc.

In India the first magazine in the field of periodicals was "Oriental Magazine" (Calcutta Amusement) which started in 1785. But this magazine was discontinued after some issues. The twentieth century brought real development in this field. Many book reviewing periodicals stared in India. The names of Calcutta Review (1844), Hindustan Review (1900), Indian Review (1900), Modern Review (1907) are worth mentioning.

Not An Easy Task

Successful reviewing of books for newspapers and educational journals requires an expertise in journalistic writing which is different from all other forms. It is not essential that the regular staff members of a newspapers or educational journals write reviews for their publication. This job can be entrusted to seasond critics and specialists in various fields. However, there is no harm if sometime or the other a regular staff member of a newspaper practises this art.

It has been generally observed that none of the newpapers or journals appoint people on full time basis for the purpose of reviewing. Employing some critic solitarily for the sake of reviewing is considered an expensive affair. Various newpapers and journals keep on reviewing books on different subjects and it is not feasible to keep specialists from all the fields on regular basis just for the task of book reviewing

Outside Reviewers

Now-a-days the practice of writing reviews by outsiders is on the increase Such people often come from various universities, institutes of higher learning and some famous people in their respective fields. The outside reviewers keep possession of knowledge and ability to assess accountability on their subject. But mere possession of knowledge would not make them fit for the job unless they are able to write in a readable and acceptable manner. A reviewer is given importance provided he has kept in touch with the latest developments and trends along with expressing himself fruitfully.

Book reviews are included in newspapers or journals as an integral part. These boost their popularity, leading to increase in their circulation. In some cases book reviews are inserted in the columns of a publication just to follow the fashion. Very few publications offer variety in their book reviews. Undoubtedly, book reviews add to the importance and authority of the newspapers.

One of the important puposes of book reviewing includes providing guidance to its readers. But there are some critics who perceive things as perfectionists and act as great fault-finders Whatever they write can hardly be of any use for common readers Perhaps they write for the sake of other fellow critics or reviewers. Such writings to not serve any objective. Often it is asked whether the book review has to help the reader or not The answer should be in the affirmative.

Book reviews also enlighten readers on fresh publications besides giving details on them It is essential to ensure that a book review is of good standard so that it helps the publication. This implies responsibility and objectivity in views and maturity of expression

The staff members of various publications usually remain busy and whatever they write cannot be considered as experts' views Similarly, other half-baked critics and reporters, and over-ambitious authors wishing to get into print produce what can be termed a "reporting review" which is basically a report of the subject matter of the book under review, with a few comments from the reviewer. However, it does not fill the bill as far as the art of book reviewing is concerned.

In fact a good review cannot be described as a thing in itself. It is essential to bring in analogies because the subject matter has to be studied in the context of existing standards. This means that the review should incorporate references to other books etc. by others or the same author. Offering examples also helps to bring out contrasts which sharpen the comments and result in clear understanding of the matter reviewed.

Value of Book Reviews

The purpose of sending reviewing copies to periodicals is to publicise the book. The authors and publishers naturally wish to have a favourable review for their books. Sometimes, they influence the reviewers for that purpose

It does not mean all reviews are favourable ones. Reviews in standard periodicals are of a critical type. But there is a general feeling that most of the reviews published in different journals are laudatory and less critical. This attitude is aptly described by Merritt in the following words: "There is a chorus of praise, a reluctance to condemn, and a strong tendency to say nothing one way or the other". On the whole reviews eliminate the poorest and point out the best, thereby rendering a valuable service to the average person.

Types of Book Reviews

Broadly there are two types of reviews, (1) critical, and (2) journalistic. Critical reviews belong to the category of literary criticism They are based on subjective approach. This may differ from person to person. On the contrary, journalistic reviews are objective and less critical. They summarise the contents of the book, noting the style and treatment It may even point out the physical qualities of the book such as paper, binding, printing, illustrations, standard of exposition, index and other bibliographical details The tone and tener of the review is not liable to much change, if the book is seriously reviewed by good reviewers The distinction of book reviews into critical and journalistic is not a concrete one, but only an arbitrary division

In this connection Martha Boaz has stated that reviews, in general, may be divided into two classes, the descriptive and the critical. The descriptive review does not criticise, it merely seeks to tell the reader what the book purports to be and describes briefly' its content Critical reviews have been subdivided by Wayne Gard into such types as judicial, moral and impressionistic "The judicial type compares a book with other title which has been accepted as good The moral weighs the book according to ethical standards The impressionistic type, the most common, judges a book by the critics personal reactions to it rather than by objective standards". Again, reviews can be grouped according to the methodology in writing reviews. Some reviews are descriptive and critical in nature They vary in length Each book is described by a specialist in the field and represents a critical framework Another type is a sort of analytical review. They are usually short. Most of the reviews found in reviewing peridicals are of this type. Only concise information is given, noting the proes and cons. But an element of criticism will be there. The third type of review is the one in narrative form. It is very sketchy and only general information is given Many books in the same broad subject field are taken up together for reviewing purpose and narrated one after another The fourth type is abstracting reviews. Here abstracts are given and they are not critical in nature. Abstracts can be long or short, but short abstracts are more in number.

Time Factor

(a) Post-natal Reviews

Reviews must be published immediately after the publication of books The value of reviews depends upon the promptness with which they are published The book selection value of reviews is inversely proportional to the span of time between the date of publication of the book and the date of appearance of the review in the reviewing periodicals In many cases, reviews appear very late, say one or two years after the release of the book. Time lag is comparatively less in general periodicals than professional or subject periodicals. This may be due to the periodicity of these publications. First of the professional journals are published either as monthlies or quarterlies. It is a very serious problem in book selection.

(b) Pre-natal Reviews

There are certain publications available now in which reviews come out even before the publication of books. This is possible only if there is real cooperation between the publisher and the reviewing agencies. Books must be sent out at the proof stage for reviewing so that the reviews can be published before the publication of books. Publishers make advance announcements regarding the forthcoming books. This information is helpful in book selection. In the United States, the United Kingdom and other advanced countries, reviews appear sometimes one or two months ahead of the actual publication of the books.

Essentials of Book Reviewing

It is not everybody's cup of tea to write a good review. This art can be cultivated through continuous practice. Some points which are to be considered while reviewing a book are given as under:

1. It is essential to avoid vagueness for a reviewer who is supposed to be clear about the subject.
2. A review should not consist of unnecessary details about books which will give away the main theme of the book.
3. The whole story of the book should not be disclosed in the review A review is different from a summary. By telling the

end of the whole story the suspense may be lost. The review has to offer guidance and not to spoil a possible good book for the reader.

4. The critic should never assume that the reader already knows up to his (critics) level Rather he should introduce the topic for the common reader in a readable and understandable manner.
5. Whereas one is not expected to write too much in a book review, he should also not leave the review incomplete One can say that practice makes it possible for the reviewer to make it appropriate for the reader.
6. Some reviewers just peep into the book—read its details on the jacket cover, glance at the start, middle and end of the book and write the review. How far he is successful is for we all to decide.
7. Not all the books received by the publication people are reviewed Some of them can be introduced through the columns by giving their title, author's name, publisher, price and the pages covered.
8. Regarding the size of a review, a small review can consist of three to five paragraphs and a detailed review can be of 10 to 18 paragraphs of medium size.
9. A review reflects the personality of an author who with his ability conveys a philosophy through his versatile style.
10. The reviewer should not hurt the feelings of the author by unnecessarily criticising him.
11. A reviewer, if he wishes, can give a few quotations from the work reviewed
12. It is for the reviewer to decide on the prefatory remarks of the review. It can be on the basis of his total impression after reading the book. The reviewer is required to arrange all the above points in a systematic manner and then write a review.

private schools can buy advantages to their children for entry into the university education through securing better academic standards.

In terms of university entry, it is the chance of gaining three or more 'A' Levels which is important. In 1961 only two-fifths leavers from private schools had any 'A' levels at all, but by 1981, 63 per cent were leaving with at least one 'A' level, and 45 per cent had three or more By 1986, 21 per cent of 17-year-olds of school were back in the private sector and 63 per cent of all private school leavers obtained at least one 'A' level and 46.4 per cent had three or more. (ii) Development of character through discipline is considered another advantage (iii) Other children will be encouraged to work hard for their examinations and later on ensure well-paid careers, and thus securing a position of 'getting on' in society.The author illustrates the third advantage accruing to the students of fee-paying private schools by quoting a few research studies like that of Boyd (1973) and of Reid (1986). The conclusion drawn from these studies indicated that high-ranking members of the civil service, the judiciary, the armed forces, the clergy, the clearing banks, elite positions in commerce, industry, and politics are disproportionately likely to have been educated privately (p.52). But it does not follow that a similar relationship will hold good in the future for pupils currently in private schools. Similarly, boarding as such regarded as a privilege depends on the individual child and the family circumstances.

Privatization process within the eduction sector has also been in operation since the Conservative Party won election in 1979. The author illustrates this process through multi-dimensional in-built mechanism of privatization in the education system. Through the assisted places scheme, 12000 new places have been created for those students who merit under this scheme for transfer to selected private schools from maintained schools (high-ability students). This scheme was the one major aspect of the multi-faceted 1980 Education Act and under this scheme, the state financial help is provided 'to give able children a wider range of educational opportunity', by giving help with tuition fees, as independent schools.

The other processes of privatization are:

1. Government funding through charitable status.
2. Other government funding and support.
3. Privatization within the maintained sector.
4 Education as a consumer products.

The 1988 Education Reform Act incorporated a further scheme and strategy of privatization of the education system. City technology colleges represent the most obvious of the moves to support the privatization process in education. The grant-maintained schools have also been allowed initiatives ana schemes which encourage privatization. The changes with regard to open admissions, local financial management, and other wider powers of government bodies are very similar in that direction. "Parents" choice within a market of diverse schools will ensure that inequality and selection will soon become the major characteristic of British Education (p.115).

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These suggestions may check the growing tendency of privatization in the British school system

V.P.GARG

Book Reviews

Privatization and Privilege in Education

Geoffrey Walford
Routledge, N.Y, 1990, IX +134

THE book under review picks up a long-debated controversial issue of the so-called 'privileged private schools in England under a historical background "Politicians, policy-makers, and the general public tend to have strong opinions about private schools." But the author questions this stand as "the debate is usually conducted more in terms of polemic than of a rational argument" In 1987 there were about 2,400 independent or private schools in Great Britain. They educated more than 5,60,000 children, just over seven per cent of school-age pupils, and about 18 per cent of those in school sixth forms The private sector is characterised by its diversity as much as its elitism.

The book attempts to present a clear picture of the nature and extent of the whole private sector of British Schooling. In England, the elite schools, fee-paying or 'commercial' (Halsey, 1981), are no longer called the public schools. The nomenclature of the public school was given first by the Clarendon Commission This commission put nine schools as "Great or Public Schools' These were Charter House, Eton, Harrow, Merchant Taylor's, Rugby, St. Paul's, Shrewsbury, Westminister, and Winchester. Merchant Taylor's and St Paul's were day schools Regular sports fixtures, especially in cricket, were a key part in that acceptance of status By 1960, membership of the Head master's Conference was usually taken as a credit mark for calling a school itself a public school.

In India, too, the nomenclature of 'public schools' has been adopted since the so-called public schools in India have followed the British legacy The argument given for calling them as public schools was that entry in these schools was from all over the country rather from the neighbourhood.

But in recent years, this nomenclature has further undergone change. In the fourth chapter, the author has made a case that these schools should be called as 'independent', as it provides a satisfactory description of the relationship between the state and these schools.

In chapter 'Politics and Private Schools', the author discusses differential provisions through a tripartite system of maintained secondary education, in addition to a continuing private secondary sector though the 1944 Education Act brought free secondary education for all. Recent social surveys indicate that the conservative party's support for private education is much more in line with positive public attitudes to private schools than is the oppositional stance of the Labour Party

Do private schools give what parents want ? The answer to this question is investigated by the author: "The parents seem to have three basic motives in private schooling of their wards. These are· (i) These private schools can buy advantages to their children for entry into the university education through securing better academic standards.

In terms of university entry, it is the chance of gaining three or more 'A' Levels which is important. In 1961 only two-fifths leavers from private schools had any 'A' levels at all, but by 1981, 63 per cent were leaving with at least one 'A' level, and 45 per cent had three or more. By 1986, 21 per cent of 17-year-olds of school were back in the private sector and 63 per cent of all private school leavers obtained at least one 'A' level and 46.4 per cent had three or more. (ii) Development of character through discipline is considered another advantage (iii) Other children will be encouraged to work hard for their examinations and later on ensure well-paid careers, and thus securing a position of 'getting on' in society.The author illustrates the third advantage accruing to the students of fee-paying private schools by quoting a few research studies like that of Boyd (1973) and of Reid (1986). The conclusion drawn from these studies indicated that high-ranking members of the civil service, the judiciary, the armed forces, the clergy, the clearing banks, elite positions in commerce, industry, and politics are disproportionately likely to have been educated privately (p.52). But it does not follow that a similar relationship will hold good in the future for pupils currently in private schools. Similarly, boarding as such regarded as a privilege depends on the individual child and the family circumstances.

Privatization process within the eduction sector has also been in operation since the Conservative Party won election in 1979. The author illustrates this process through multi-dimensional in-built mechanism of privatization in the education system. Through the assisted places scheme, 12000 new places have been created for those students who merit under this scheme for transfer to selected private schools from maintained schools (high-ability students). This scheme was the one major aspect of the multi-faceted 1980 Education Act and under this scheme, the state financial help is provided 'to give able children a wider range of educational opportunity', by giving help with tuition fees, as independent schools.

The other processes of privatization are:

1. Government funding through charitable status.
2. Other government funding and support.
3. Privatization within the maintained sector.
4. Education as a consumer products.

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V.P.GARG

Trends in Modern Indian Education

S.P. Ruhela and R P. Singh (Eds.)
Uppal Publishing House, New Delhi, 1990, pp. 468, Rs 425.00

THE book opens with an interesting, lucid, brief but rich account of Prof S N. Mukherjee's contributions to the field of education with whom the editors had the privilege to work in the later part of 1960's The book, a collection of 33 essays on a number of diverse but significant topics of modern Indian education contributed by some of the leading educationists of the country, is a timely publication which brings out very clearly and forcefully trends, problems and future perspective of Indian education. The very first chapter of the book which profiles the great Guru(Professor Mukherjee) by an educationist of the stature of Dr Ishwar Bhai Patel is a symbol personified of the respect and honour given to the doyan of Indian education whose variety of contributions have benefitted the teacher education world a lot. The remaining 32 chapters deal with different aspects of education. These chapters can be divided into six main categories, viz. school education, higher education, teacher education, education of the special groups and SC/ST and women, planning, and others

Three chapters are devoted to school education. These describe primary education in its historical perspective, new learning environment through non-scholastic strategies of secondary stage of education and financial management in secondary schools of the country highlighting its various developments, role of the school principal in the context of resource management and approaches to a new kind of budgeting.

Higher education and its various aspects with reference to past developments, present status and future needs are discussed in eight chapters A reader is initiated to the system of higher education in its historical perspective, what ails the system, its problems and measures by which the system can be strengthened; higher education in the colonial model, present anchronisms and new directions in teaching in the classrooms of colleges, and higher education in the perspective of eighth five-year plan. Factors facilitating the functioning of a multipurpose organisation like university, complexities in university administration and fundamental requirements of an efficient university are also described Need to integrate different resources for sound management practices too has been outlined Integration of higher education, research and development process is suggested to break away the vicious circle of poverty and slow growth. A few rules concerning higher education and court's verdict are also mentioned.

Teacher education and its various aspects ranging from qualities of teachers to growth of secondary teacher education institutions, their present status and role of the faculty in relation to future organisation of these institutions, a case study of the developments of teacher education in state, reform in teacher education curriculum transaction and how to bring it, emerging fields of research in teacher education; teacher education in the year 2000 AD and three scenarios of futurological perspective in teacher education are discussed. Trends in the teaching process, teaching behaviour and principles of learning are also dealt with. The chapter on NCTE is an informative one. In all, eleven chapters are devoted to teacher education.

Five areas of concern in educational policy and planning and existing facilities for the training of educational planners and administrators in India, training materials as also future training needs are covered under planning in two chapters.

Four chapters are devoted to the education of special groups highlighting a research study relating to higher education of SC/ST and its policy implications, status of women from vedic period to modern times, and barriers of and strategies for women advancement into senior positions and working of the four national institutes for the handicapped.

A few topics which though significant but could not be covered under the above-mentioned five broad categories are covered under the head 'others'. The causes of the failure of Indian education in the last three decades, and the directions in which it should work, weightage to resources other than money such as teacher community, students and time and giving more emphasis to achievement-oriented plans rather than expenditure-oriented; and human values in the system of education are given. Information systems and services in India is an informative chapter and forms an interesting reading

The book is a rich volume which gives an interesting analysis and neat presentation of various aspects of education; yet some issues of equal significance have either been omitted or their coverage is inadequate. School education and planning appear to have been given insufficient coverage while themes like admission and selection procedure, professional development of teachers and teacher educators, inservice education, innovations and innovative schemes, comprehensive colleges of education, four-year integrated course of teacher education, role of SCERTs/SIEs in strengthening teacher education, State Boards of Teacher Education, newely established DIETs, school experience programme, etc could have enhanced the richness of the book. Moreover, the different chapters appear to have separate entities and are not inter-related. However, one should not carp for the omissions because one cannot sweep the entire backyard of the complex phenomenon of different themes of education in a volume like this. On the whole, it is a very interesting, useful and well-produced book. Educational planners and administrators, social scientists, teacher educators, research scholars and students of higher education will find the book a welcome addition It will serve the purpose of content enrichment programme for students of teacher education. It also contains useful information for the layman as well as the informed audiences as it satiates one's hunger for more knowledge of modern educational issues.

N. SABHARWAL

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TO OUR CONTRIBUTORS

JIE invites articles/papers on the impact of educational research on classroom practices and policy decisions. Specific examples where this impact is apparent may be given.

GENERAL EDITOR

Social Relevance of Research

(Dr) R.P Singh

THE whole question of social relevance of research is of recent origin As more and more money is being made available to research, whether in the areas of industry, business management or science and technology, the decision-makers are asking about the utility of the research findings Its pertinence is being examined more in underdeveloped countries than in developed ones Perhaps there are reasons for such an anxiety In the developed countries the researcher is already conscious of his social dependence. His survival is dependent upon resources being made available to him through foundations or trusts set up for specific purposes. If one does not find oneself capable of conducting such a research, one does not come forward for it. The willingness of the scholar to work and get supported is reciprocrated by a conscious society with a goal in mind Numerous trusts or foundations create special chairs in the university system or outside. Even the universities themselves have witnessed a shift in their specific areas of activities From preparing broad-minded individual scholars with a vision of 'gentlemen' they have gradually come to accept the idea that unless universities provided leadership to their society, the 'competitiveness' of their social systems would be in jeopardy Research, advanced nations have come to recognise, can sustain them in the cut-throat competition in innovations in almost all areas Their governments have come to recognise the fact that through floating of research funds for specific purposes, say, space research, alternative sources of energy, building materials, aviation or arms, etc they can get scholars who would address themselves to resolving their problems No wonder then that more and more able-minded, ambitious, industrious and competent young and old scholars are responding to this social need Perhaps it also explains why so many of them are earning Nobel Prizes from amongst researchers from the developed countries. Except perhaps in the area of literature the underdeveloped countries are seldom making any contributions.

The pity of the situation is that the underdeveloped countries have also come to accept their place in the scheme of things. They do not have the ambition to stand up to state that they would also like to make contribution in all shades of academic activities. The scholars who have the ability or the ambition tend to reflect their nation's despondancy. The ones who can manage to leave their respective countries for academic reasons do not come back It be made clear here that it is not proposed here to deal with their 'braindrain' problems We are concerned with those who wish to grow here and have no prospect of ever being absorbed elsewere . How come that they do not feel that they have any stakes in developing their own country? Are they or are they not aware that along with their nation they would also grow in stature and recognition if they worked with a social goal in mind.

Let us elaborate on the concept of 'social' relevance itself a bit more. The days of research *per se* have lost much of their luster. Now-a days even in the underdeveloped countries organisations are being set up with their areas of prioritisation. For example, in India there is a chain of CSIR laboratories Then there are institutions like ICSSR, ICHR, ICPR, IIAR, IIAMR, etc to suport research. Besides there are numerous industrial houses where research findings are being put to immediate use. A regular stock-taking is done to assess how much of research findings is contributing to national requirements Research is being even now conducted largely in the universities, IITs, NCERT and elsewhere Except in the universities where most of the research is directed towards training scholars in research methods, the others face a close scrutiny of their efforts.

In fact we have in India two sectors of higher education. Whereas initial education of future research workers is still with the government-sponsored research system. Of course, a scholar in the government system has the freedom to take up individual research projects also but cooperative, prioritised research is encouraged for obvious reasons

Two Basic Questions

(1) What is university's contribution in resolving social problems in areas like India's poverty, better means of learning or teaching, etc.

(2) Is government's sponsorship encouraging creation of new knowledge, better competitiveness in creating national identity, etc. These questions arise because in agriculture research and extension have done wonders in this country but in industry, business or societal problems we seem to be borrowing on turn-key bases from the developed countries. Consequently parallel societies have come to co-exist in this country—one very affluent and well-informed and the other neither informed nor affluent . Even within these two broad categories numerous shades of sub-systems are thriving A kind of egg or chicken question is being bandied about as to whether or not universities should have been playing their given roles of training researchers, creating a social awareness in them and also helping to build a self-sustaining academic climate with the ultimate goal that a better or brighter future for India would have been ensured. Of course, when one puts this question the universities respond by saying that the society does not trust them enough or else where was the need to have parallel research organisations. In their own self-centred manner the researchers of the government-sponsored institutions feel that they have scored a point or two over the university system but they too lack the vision of generating meaninful research whose uses could be well-defined. They have a sort of grouse against the top bureaucrats who do not take into cognisance their research findings, so a situation has emerged in which the university-trained researcher has severed his links with the universities and finds no comfort in the parallel system where he is working either for lack of direction or lack of recognition.

It would not be too much to say that a rat-race is on among researchers too who are seeking positions of power and compromising academic ethics. They employ devious means to realise their individual goal but eventually lose academic credibility among their fellow workers The tragedy, therefore, is that if the universities are terrified at the prospect of growing bureaucratisation and are gradually losing interest in research itself the system created for resolving social problems has lost the clan both because of the excessive perks being given to them and also because the wheeler-dealers in the system have no vision greater than the maintenance of their own chairs In this dilemma the society has lost its battle.

Within the universities a sort of feudalism has grown and its taking menacing postures The decision-makers here have all the necessary powers and time to indulge in non-academic, anti-societal activities. Ranging from research approval to degree granting is now-a-days open to manipulation. Indeed, the research degree itself has lost all credibility in the job market It is no more than an additional requirement so imposed by the University Grants Commission (UGC) One wonders how can a person be trained if he has no motivation. We seem to be content with talking about a hypothetical society which is facing innumerable problems The additional salaries have created an anomolous situation. More perks have not yielded more social commitment or more work. It looks as though the teachers have become another organised militant union of academics whose principal business is to demand more perks and undertake lesser responsibilities. The majority is taking it easy when the majority of their colleagues are straining their vocal chords for unrelated academic freedom

Research, therefore, has to be organised, scrutinised and purposively directed to some goal and what better goal one could have than to direct it to a social purpose We borrowed research methods, jargon, research designs from the most advanced countries, then why not a bit of research purposes and climate too ? In industry, business, technology and agriculture if the Indian researcher has started taking interest in both R&D, then why not in other disciplines ? How come that their research is still couched in a jargon which is so difficult to decipher ? There is apparently no shortage of talent or want of effort, then why is it not being put to any use ? Aren't our universities acknowledging the shift in the goals of higher education ? Perhaps, they are but the system is not showing results either because the direction is lacking in focus or the researcher is being smothered in his efforts by the unacademic climate that has grown in the holy precincts of the temples of higher learning. Perhaps there is need to shake them up a bit or else they will get frozen stiff by their inaction.

Selecting a Research Methodology in Education

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THE general trend in educational research is to pick up a few variables and find out the relationship between/among them or to compare two or more groups on some variables Experiments are conducted to see the effect of certain variables; control is hardly exercised in such studies Besides, effect which is attributed to some manipulated variables can hardly be justified in the absence of proper control

Most studies use inferential statistics in analysing the data though the assumptions underlying such statistical treatments are rarely examined. For example, in employing analysis of variance, the researcher does not bother to check the normalcy of the distribution, etc. The majority of young researchers feel that formulations of null hypotheses for their studies and testing them through statistical procedures is a must for the study to be an acceptable one. It is not purely their fault, they are initiated into this kind of thinking by their teachers. Examiners also look for some statistical treatment whether or not they are conversant with their usage Research reports tend to lack penetration and understanding of the concepts

Determining Appropriateness

A good piece of research is one which honestly tries to answer certain questions. It is for answering these research questions one should adopt a suitable methodology, research design and techniques. By analyses of data, quantitative or non-quantitative (qualitative) approaches may be adopted. Research designs are generally thought of to be associated with studies requiring quantitative analysis A good research design is as important to qualitative research as it is for quantitative one. Historical, descriptive and analytical studies need not have any statistical treatment and need not adopt rigorous sampling procedures; material at hand should be judged as regards its adequacy of the phenomenon under study.

A research report may be purely qualitative or quantitative or even a combination of both. It is difficult to agree with those who consider the interpretation of quantitative analysis as qualitative judgement. It is adherence to a school of thought that determines whether a phenomenon be studied qualitatively or quantitatively.

As in other social behavioural sciences, a number of methodologies involving the use of quantitative and qualitative techniques are needed to carry out research in education also. Data for qualitative research can be collected through techniques such as remains of the past, folklore, peoples' written and spoken words, their observable behaviour and historical records, It is important to be familiar with the theoretical framework within which these qualitative methodologies have developed. Quantitative research involves data collection through questionnaires, inventories and demographic analysis, etc. It may give an impression that it is the nature of the problem that warrants the use of quantitative or qualitative methodology. As mentioned earlier, it is a school of thought one has faith in and not the nature of problem only that determines the approach. For example, from an analysis of the relationships between suicide rates and a range of social facts, Durkheim argued that the greater the integration of individuals with social groups, the less likely they were to commit suicide Social integration is measured by the number and strength of a person's social relationships with others. He established various statistical correlations between suicide rates and social situations of individuals. He found that Protestants had a higher rate of suicide than Catholics, city dwellers than rural dwellers, unmarried than married, older adults than younger adults. In each instance, Durkheim claimed that the former had a lower level of social integration than the latter

This analysis is based on the assumption that social facts should be considered as things. The belief systems, customs and institutions of society, the facts of social world should be considered as things in the same way as the objects and events of the natural world.

On the other hand, British Sociologist J.Maxwell Atkinson rejects the logic and procedure adopted by Durkheim. Atkinson asserts that social world is construction of actors' perceptions and subjective interpretations. As such it has no reality beyond the meanings given to it by social actors. Thus an act of suicide is simply that which is defined as suicide by social actors Definitions of suicide depend on people's interpretation of the events. Atkinson argues that suicide is not an objective fact that can somehow be separated from the perceptions of social actors It therefore makes no sense for sociologists to treat suicides as facts and seek to explain their cause. Instead the appropriate question for sociologists to ask is: How do deaths categorised as suicide take place? An answer to this question involves an investigation of the meanings employed by those concerned with interpreting the cause of what is seen as unnatural death.

In the analysis of suicides, the approach adopted by Durkheim is referred to as positivistic and that adopted by Atkinson is known as phenomenological. The above examples are purely in sociological contexts. In teaching such situations can also be cited. For example : Who is an effective teacher ? Teacher behaviour is identified as a combination of various skills and characteristics One way of observing teacher behaviour is solely subjective; based on the assessment of the observer as is seen in the traditional method of teacher training. Here no quantification is made even of the skills of the teacher. Another way which gained momentum in recent years is to quantify skills and the observer records as to how many times each component of a skill is demonstrated by the teacher in a given period of time. This is only an illustration of the methodologies adopted and the mention of criterion for effectiveness is avoided.

The foregoing examples may be helpful in understanding the situations which could be studied qualitatively and quantitatively. This classification of research studies in social sciences has its genesis in phenomenology and positivism. Educational research can be classified in several ways; one way may be qualitative vs quantitative, another may be with reference to time-frame, i.e. historical, survey and experimental and yet another sociological, psychological, philosophical, historical, administrative, and so on. A study may adopt one of these approaches or a combination of two or more

Before proceeding further, we may distinguish between a conceptual frame of a given phenomenon being an objective reality which is liable for quantifications and counting which is again quatitative in nature.

Certain other methods which do not follow phenomenological approach as such can also be termed as qualitative methods, historical method or historiography is one of them The historical method involves collection of data from various sources, verification of data collected through the process of historical criticism and analysis and interpretation of such processed data

There is scope for the use of qualitative method in other research techniques such as case studies and analytical studies (analysis of documents and texual material) These are the methods in which qualitative analysis can be used partially or wholly That History of Education is unamenable to quantification is not correct Knowing the number of students who went to school, teacher-pupil ratio, the kind of occupational opportunities, the kind of power situation and the way they were related all are related to quantitative methods. It may be said that depending upon the requirements of the phenomenon studied, a historical study may involve qualitative analysis or a combination of qualitative and quantitative analysis.

Case for Reorientation

It is amply demonstrated that the knowledge of applications of qualitative and quantitative approaches to educational studies may produce quality research. The educational researcher must, therefore, be equipped properly with the techniques of qualitative analysis also.

There is over-emphasis on quantitative methods for analysing research data in the field of educational research The recourse is due to the ease with which data are analysed; the researcher hardly attempts to interpret the findings in their entirety. This, in a way, implies lack of knowledge of basic concepts and constructs relevant to the study Also the major portion of 'Research Methodology' papers is devoted to quantitative methods and techniques. To be able to choose a right kind of methodology, teachers of research methodology do need an orientation in qualitative methods. Interaction between teachers of education and those of other social sciences (particularly sociology) seems to be an immediate necessity in order to pursuade the former to apply qualitative methods as well.

Research Designs and Techniques of Quantitative Research in Education : Their Adequacy, Relevance and Appropriateness

(DR) R.P BHATNAGAR

RESEARCH is basic to every field of knowledge. It is a tool of tremendous importance for verifying, testing and validating current and old knowledge and also a means of creating new knowledge. It has, during the past few decades, moved to the center of behavioural sciences This is true about research in education also In the field of education there has been a lot of quantitative growth of research during the preceding two decades as is described in the Third Survey of Research in Education It is also a fact that, as compared to research done earlier, qualitative improvement has also taken place to a certain degree. But, this side of the picture is not quite bright. An analysis of educational research done in the past in this country reveals facts which are very disappointing On several counts this voluminous research seems to be week and inadequate.

A review of past researches in education reveals that most researchers are confused about various approaches to educational research. It has been found that in many studies the approach adopted is causal-comparative which comes under descriptive research while the researcher has described it to be of experimental type. Similarly, correlational studies which, again, fall under descriptive research are described to be of experimental type in several studies. Contant analysis, documentary surveys, information analysis, activity analysis are quite often confused with either historical research or field studies while they all come under survey type of research which is a kind of descriptive research. Field studies and field experiments are very much confused with true experiments. Similarly, ex-post-facto approach is considered to be different from field studies and field experimants. In fact, there has hardly been any true experimental research in education, while there are many researchers who claim that they have used experimental approach in their studies. It is very essential to know the distinction between these various approaches as the spacific methodology and techniques, particularly the research designs are very much determined by the approach adopted. For example, the case study method when used as a kind of descriptive approach will have entirely a different research design as compared to that which is warranted by the case study when it is used as a quasi-experimental design. The evaluation of the results obtained is also linked with the approach adopted in research.

The inferences drawn should always be evaluated in view of the degree of reliability and validity guaranteed by the kind of research approach adopted by the researcher. It is a fact that certain approaches yield more valid and reliable results while others come out only with crude results In some reliability or precision is high, but generalizability is poor. In the same way some have high generalizability but poor reliability. While interpreting and discussing the results the reseachers are very much required to take these points into consideration, which is possible only when they very clearly understand the characteristics and implications of these various approaches to educational research. For example, field studies maximize realism and concreteness of behaviour system The field experiment goes a little away from this in the direction of intrusiveness, i.e. control and manipulation of variables The laboratory experiment entirely discards the concrete naturally occurring behaviour system and, thus, moves away from realism. The descriptive approach, on the other hand, yields results which are more realistic and generalizable but are less accurate. When judged in this perspective the research in education completed so far in our country displays a very grim picture. It has been found in many researches that the topic as stated calls for a cause-effect relationship to be established but the researchers have used correlational methods or descriptive research methods instead of experimental designs. The point that is being emphasized here is that the research designs as used in many researches are not appropriate, the reason perhaps being lack of clear understanding of various approaches to research in education. One thing that every researcher has to remember is that "realism", "precision" and "generality" are all very much desirable in every research but there cannot be a research design which maximizes all of them at the same time. Hence, he has to face a three-horned dilemma. All of these three qualities are most wanted, rather essential. Yet, all of them can not be maximally achieved in any single study. For that reason, therefore, a great insight is required for selecting the most appropriate approach of research which, in turn, ,may help in identifying the most appropriate research design.

From the researches reviewed by this author an impression is gathered that there is a lot of confusion about hypothesis-writing Some of the researchers write them in the nill form; others prefer to write them in the form of declarative sentences. Still a few others prefer to write only research questions to be answered by the research and discard the need to write any hypothesis. This confusion prevails in the minds of the researchers due to lack of understanding of the rationale underlying the process of hypothesis testing which assumes "tollendo tollens" form of logical reasoning The researchers should bear in mind that it is only the null hypothesis which can be tested statistically. There is no statistical method which can test directly any hypothesis other than the null hypothesis. Another frequent violation of this principle relates to directional and non-directional hypothesis. In many studies it has been found that the hypothesis stated is directional but the statistical test used is one which is relevant to non-directional hypothesis testing.

Hardly any truely experimental study has ever been conducted in the field of education. Almost all of them are of field study or field experiment type. But most of them are quite inadequate from the design point of view. In the designs used in most of these researches the three great principles stated by Kerlinger as "Maxincon" meaning, thereby, maximization of experimental variance, minimization of error variance and control of extraneous variables are, generally, not paid enough attention Maximization of experimental variance means making the variances in the independent variables of the groups which are caused by different levels or conditions of the independent variables sufficiently different from one another The conditions or levels should be made visibly different from one another For example, if we are comparing the effectiveness of two methods of teaching A-I and A-II, then it is necessary that they should be really different from one another Otherwise, their effect on teaching cannot be expected to be different Thus, the principle means "pulling" the levels of the independent variables apart as much as possible, to make them as unlike as possible. Again, this has also to be remembered that too extreme and too close to mean groups may distort the results. The lavels or the conditions should be *rationally* and *reasonably* different from one another. Attempts are, generally, not made to seek such a balance in the experimental studies made in the field of education in our country. Minimization of error variance means minimizing the effect of any variable other than the experimental variable by (1) reducing the differences among subjects on extraneous variables through randomization and control, (2) reducing the errors of measurement through controlled conditions and increasing the reliability of measuring tools, and (3) controlling other environmental conditions Control of extraneous variables which is the third principle of "Mixincon" is also ignored in most studies.

Randomization is an important principle of experimental design. In a number of studies of experimental nature it is found that it is not present at any stage. Randomization ensures uniformity, similarity and equalization of the groups to be compared. Absence of it in the design of the experimental research creates a serious difficulty. The results, thus obtained, cannot be evaluated as the theory of probability on the basis of which we come to know the extent of chance error will not be applicable and the significance of the results cannot be tested When samples are drawn randomly, the systematic errors get reduced and the accuracy of the results increases.

The weakest part of all the experimental researches in education, according to this author, is the large component of error caused by conditions pertaining to measurement of variables. The psychological tools used in these researches are, by and large, not reliable. In many cases the reliability of these tools is not worked out. In case of standardized tools the original reliabilities are quoted and it is assumed that these will hold for the new population also which is wrong. Same is the case with the validity of the tools that are used in these researches In most cases the tests used are not valid For example, adjustment inventories, organizational climate questionnaires and many personality inventories used in these researches cannot be considered valid ·Random and systematic errors of measurement caused by the use of unreliable or less reliable tools used increase the error component and reduce the precision of the results obtained. This is the case with most researches in education. Systematic errors of both kinds (measurement as well as sampling) are the *bad errors* as neither they can be estimated, being outside the scope of any statistical theory, nor can their extent and direction be predicted.

According to Campbell, the optimum design for the experimental research in a social setting is one that maximizes both internal and external validities. As described by Campbell and Stanley, there are a number of factors that affect internal and external validities of experimental research But the voluminous research of this kind conducted in the field of education rarely shows any awareness of these factors and, hence, any sign of attempt on controlling them.

The researcher himself is an important extraneous variable of the experimental research which needs to be controlled. He introduces an unintentional component of error in the resultes. This is termed as the problem of experimenter bias by Wilson, and Rosenthal and his associates. According to them, this is a serious problem and should be taken into account by every one planning an experimental research. Similarly, subjects' perception of the demand characteristics of the research situation in which they desire to make a good impression on the experimenter, when they try to present themselves in the best possible light, when they try to respond in a socially desirable manner also introduces an error component in the research outcome Errors due to these biases need to be rigorously controlled. But, in very few researches such attampts have been made. There are various methods available which can be used for this purpose. But, little attention is paid to this aspect of experimental research

Misuse, rather abuse of statistical designs is another glaring fault of the designs used in experimental research in education conducted in this country. Parametric tests like the t-test, F-test, factorial designs, correlational methods, etc. are frequently used in spite of their assumptions not being satisfied. The concept of power of the statistical test in a given situation is not, at all, taken into consideratrion In many of these researches, if non-parametric tests of statistics were used instead of parametric ones, the results would have been more accurate and valid. Which statistical test will be more powerful is a relative phenomenon contingent upon the specific situation of research. It is not a thumb rule that parameteric tests are always most powerful. But, this kind of insight is not reflected in the majority of researches done in this country

The consequence of these lapses on the part of researchers has been that the research conducted so far in the field of education in this country has remained, largely, "trivial" which means that it hardly reflects "reality" and is mostly artificial or inapplicable Most of it has poor internal and external validities. The results obtained in most of these researches seem to be of common knowledge, sometimes entirely irrelevant. It will not be an exaggeration to say that in most cases it is not possible to make a sufficiently valid estimate of its precision due to various reasons already pointed out, as a valid estimate of error cannot be made.

To sum up, it seems pertinent to say that looking from the point of view of research designs or research techniques the educational research done in this country remains away from being adequate or relevant The design part of this research has been, by and large, inappropriate and poor. There is, therefore, need to make efforts on upgrading the level of awareness of the researchers in this area at the national as well as institutional levels.

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Experimental Designs: Their Internal and External Validity

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The systematic scheduling of when, what and how treatments are administered to the subjects and of the observations on the performance of the subjects takes the name of a research design. The experimental design is essentially a plan or strategy for conducting research It refers to the process of establishing cause and effect relationships.

Educational research designs are broadly classified as experimental and non-experimental. In an experimental design the experimenter controls the subjects (pupil, class room, etc.) and conditions (events, situations, etc.) to be studied In an experimental design the researcher assigns subjects to conditions rather than merely observing them in naturally occurring situations

Experimental Design

A random sample of students of a certain class is selected Half of these students are randomly assigned to one group and the other half to another They are called Groups A and B Group A is given regular instruction in Mathematics in the class and personal tutoring for an hour at home while Group B is given regular instruction in Mathematics in the class. After a lapse of six months the progress of Groups A and B is assessed by an appropriate test in Mathematics. The performance of the two groups is compared by using an appropriate statistic. The performance of Group A is found to be better than that of Group B and this is attributed to personal tutoring.

Non-experimental Design

The problem mentioned above can also be studied by making use of a non-experimental design Here the researcher identifies students who are already receiving personal tutoring in Mathematics at home and those who do not. The group receiving personal tutoring at home is called Group A while the other group is designed as Group B. The number of students in both the groups is equal. Both the groups are given instruction in Mathematics by the same teacher in the class. After a lapse of six months the performance of the two groups is tested by an appropriate test in Mathematics. A comparison of the performance of the two groups is made by means of an appropriate statistic. The inference is that Group A performed better than Group B and this is attributed to personal tutoring.

In both the experimental and non-experimental designs, the research question asked, the independent and dependent variables, the size of the sample, etc are the same but they differ in the degree of manipulation of subjects and conditions. Spector (1981) observes: "It is sometimes said that experimental studies only establish that two things are related. .. Not all experimental studies establish causation, and not all non-experimental studies fail to establish it. An experimental study can fail to hold constant or control all extraneous factors and would therefore have difficulty in establishing causality On the other hand, systematic observation, especially over-time, can allow powerful causal conclusions, and one should respect the efficacy of these designs. Practically all modern knowledge of astronomy comes from non-experimental observation" (Paul and Spector, 1981, p 9)

Characteristics of a Good Research Design

A good research design produces valid answers to research questions. The following are some of the characteristics of a good research design.

1 The experimental design must be appropriate to the problem to be studied. Independent variables and dependent variables must be defined clearly, keeping in view the purpose of the experiment. It is also necessary to examine whether it is possible to conduct the experiment and if so the kind of resources needed to conduct the same In other words, the experimental study should be feasible.

2 Adequate Control of Variables: At the outset one should be clear about the meaning of a variable. A variable is a qualitative or quantitative entity that can take on different values. Variables are often classified as independent or dependent. In experimental studies dealing with causal relationship the causes are referred to as independent variables, and the effects as dependent variables.

The purpose of experimentation is to study the effect of the independent variable on the dependent variable Often the dependent variable is influenced by variables other than the independent variables used in the study These unwanted or interfering or confounding variables have to be removed, separated or controlled so that the cause and effect relationship is established beyond doubt. Some of these variables are controlled through randomisation procedures through building them into the design, and through statistical techniques Failure to control the unwanted variables often leads to misinterpretation of experimental effects.

3. Sample . A good design takes care of the sample so that its results can be generalized to other groups or situations In a research design, randomness and representativeness of the sample are ensured.

4 A research design should yield relevant and adequate data A good experimental design yields enough information to test the hypotheses. The data of the experiment should be uncontaminated and amenable to statistical analysis and interpretation.

5 Provides a basis for determining the experimental effects: Comparisons are usually made between the group which receives the experimental treatment and the group which does not receive any experimental treatment

6 Applicability of the results The results

of a good experimental study are generalisable to non-experimental settings such as natural classroom settings, etc.

7. Criterion of Parsimony . The criterion of parsimony refers to the preference for a simple experimental design over a more complex one If a simple design can provide answers to a question, there is no need to use a complex experimental design. The complexity of the design, however, depends on the nature and purpose of the study

Internal and External Validity of Experimental Research

Ideally, a good experimental research has three tasks.

- To determine the invariant relationships among variables.
- To study the relationships among variables in a cause-and-effect framework
- To generalise the sample findings across settings, treatments, stimuli and tasks, subjects, and time.

In order to realise the above, the researcher desires:

- To maximize the effect of systematic or primary variance. The effect of an independent variable (IV) on a dependent variable (DV) is called systematic or primary variance. The effect of IV is maximized by increasing the magnitude of IV.
- To control secondary sources of variance. The effect of any or all other irrelevant variables in the experiment on DV is called secondary or error variation This secondary or error variance is to be decreased.

  To minimize error variance. This is done by increasing the accuracy of measurement of DV In principle, experiments are internally valid. But, internal validity is not automatic. it emerges through a careful selection of variables and appropriate experimintal designs.

Internal Validity

Internal validity deals with the question of whether or not IV actually caused the observed outcomes in an experiment In internal validity we ask the question: Did IV really produce a change in DV? On the other hand, external validity is concerned with the extent of generalizability of the results. "To what populations, settings, treatment variables, and measurement variables can this effect be generalized ?" (Campbell and Stanley, 1966). An experiment whose results are uninterpretable is useless Similarly, if the results of an experiment cannot be generalized, such an experiment will not be of much use Therefore, a good experimental design is one wherein all the factors that threaten the internal and external validity of the experiment are minimised, controlled, or eliminated. However, it is to be understood that experimental designs in educational research are rarely perfect in the sense of internal and external validity. Research designs which aim to maximize internal validity fall short on external validity. One should not increase internal validity to the determent of external validity and vice-versa. The trend is to ensure a balance between both types of validity to the extent possible.

In educational research numerous

categories of 'confounding' threaten the internal validity of the experimental design The term 'confounding' refers to the situations in which DV is contaminated by one or more irrelevant variables which make the interpretation of empirical relationships difficult and spurious In fact it is difficult to list all the possible confounding factors Such a list would never be exhaustive. However, an educational researcher would do well to note the following sources of invalidity of experimental designs.

- Pro-active history
- Retroactive
- Maturation
- Testing effects
- Statistical regression
- Mortality
- Instrumentation
- Experimenter bias

In educational research the term 'history' refers to any "extraneous events occurring in the environment at the same time the experimental variable is being tested", we are concerned with current history and not past history. It is not possible to stop history from occurring, but we can certainly arrange events so that history does not interfere with the inferences.

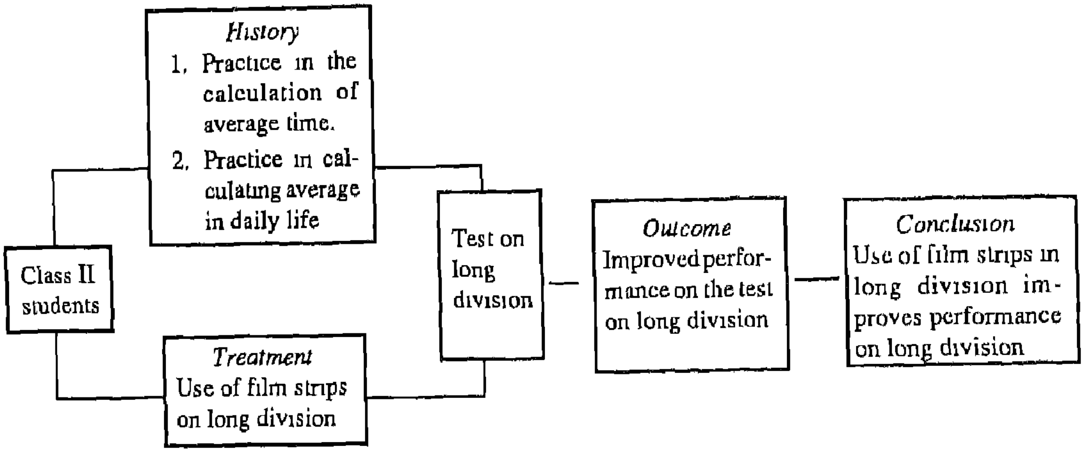
Pro-active History

This refers to the inherent differences the subjects bring with them into the study. These include such differences as sex, mental ability, personality, attitude, etc. Let us illustrate how this source of confounding is a threat to internal validity. Suppose, there are four bicycles and two best ones are to be chosen. The investigator suggests that ninth class students of a school, who are of the same age, be selected for trying out the bicycles. Two boys and two girls of the same age and class came forward to try out The investigator gave each one a cycle and instructed them that they should all start when the signal is given and cover the distance of 100 meters. The judges were assigned the job of keeping the time taken by each to reach the destination. The result showed that the boys reached earlier than the girls and it was concluded that the two bicycles pedalled by the boys are better than those pedalled by the girls. This is not tenable because the subjects differed in terms of some pro-active history variables such as sex, height, moto-ability besides length of practice. Therefore, this is not a good experiment as it lends itself to various criticisms.

How to control the effects of pro-active history? The variables of pro-active history are usually controlled by the techinque of 'mathcing' or 'blocking'. In 'matching', the most important subject characteristics in the different treatment conditions are matched. However, it is important to remember that it is not possible for an experimenter to match the subjects on each and every characteristic. In fact the experimenter may not know what characteristics are to be matched. Further, it is quite possible that matching on one variable may result in mis-match on some other variable. Therefore, matching is usually done on the most likely confounding pro-active history variables 'Blocking' is the procedure of equating groups in an experiment on a secondary variable. The dimensions on which subjects could be 'blocked' include sex, IQ, SES, ethnic origin, age, etc.

Retro-active History

This refers to the events which occur during an experiment Let us illustrate this confounding variable. A teacher of a certain primary class was upset as his Class II students did not learn long division (arithmetic) as well as he expected. So he chose a series of film strips in which a stuffed toy monkey explained


History
1. Practice in the calculation of average time.
2. Practice in calculating average in daily life
Class II students
Treatment
Use of film strips on long division
Test on long division
Outcome
Improved performance on the test on long division
Conclusion
Use of film strips in long division improves performance on long division

the merits of long division to a toy cat He showed four such film strips to the students. About this time another teacher of the school announced a contest. He announced eight prizes. Eight children whose average timing in 50 meters running race would be better than others in the class would be given prizes Each child was allowed to run the distance five times in a day for ten days Each child was asked to compute the average time taken by him/her to cover the distance of 50 meters. The contest was over The Mathematics teacher also completed the use of film strips on long division and gave a test on long division The teacher felt happy and most children performed well on the test. He concluded that this improvement was because of the use of film strips.

In this example, it is quite clear that calculation of average time (a historical event) is likely to have caused improved performance in long division So the conclusion that film strips cause improved performance is untenable. This example shows how events which occur while the treatment is being administered threaten the internal validity of the experiment.

How to control the confounding of retroactive history variables? One possibility is to hold them constant For example, if we want to study the effectiveness of a new method of teaching science to Class III children, we may select two groups of Class III children in such a way that their average IQs are equal We do this because IQ is an important variable which influences the ability to learn. Such an IQ matching of groups enables us to know that the difference in DV (performance in science) between the two groups was not due to IQ. Here IQ is a secondary variable and it is held constant by equating it in the groups. Thus, IQ effects are not removed, rather, they are distributed equally between the two groups.

Maturation

This refers to the systematic biological and/or psychological change that takes place in the child over a length of time If we fail to take into account the changes due to maturation and experience, they will adversely affect the validity of the experiment. This category of confounding is more common in single group experimental designs. For example, over the course of a special education programme children always change physically, psychologically, socially and emotionally as a result of general maturational processes. Consequently, considerable difference will be noticed in the pre- and post-test results. It is almost impossible to separate the effects of the treatment from the effects of maturation. Therefore, our conclusion that the special education programme is effective because the post-test performance of the students is better is misleading.

How to control the effects of maturation? Maturation effects are usually controlled by using an experimental design which includes a control group, If we use the procedure of random assignment of subjects to the control and experimental groups, the maturation effects would be statistically equal across groups.

Testing Effects

Some researchers call these effects as "sequencing effects" This refers to the effect of taking a test upon the scores of another test. Let us illustrate the testing effects with an example In a study of the effects of an innovative educational programme, the students are given the same test on several occasions. The students become 'test-wise: The practice in taking the test results in their getting better scores. But the investigator concluds that the progressively better scores of the students are due to the innovative educational programme. In fact this type of testing effects confounding is indeed a problem in longitudinal studies, especially studies in which a single group is measured with the same or similar tests on successive occasions (Kulka,1982)

How to control the testing effects ? These are usually controlled by using an experimental design which includes a pre-tested as well as a non-pre-tested control group. The Solomon Four Group experimental design provides a good example of how to control the confounding of testing effects

Statistical Regression

This type of confounding is also known by the name "Regression towards the Mean" The tendency of scores to gravitate towards the mean is called statistical regression. This occurs whenever sub-groups are selected from a target population based on extreme scores. One group, for example, could be a group of high achievers and the other a group of low achievers These sub-groups when retested on the same variable tend to have a mean score closer to the mean of the population from which the sub-groups were selected Regression towards the mean occurs because of the statistical unreliability in the test If the test is perfectly reliable, there will be no regression. The more unreliable the test is, the more will be the amount of regression.

Let us illustrate the statistical regression with an example. In a school, a researcher gave an intelligence test to Class VI children and identified a group of high IQ and a group of low IQ children. The following is the frequency distribution of the IQ scores of children in the class·

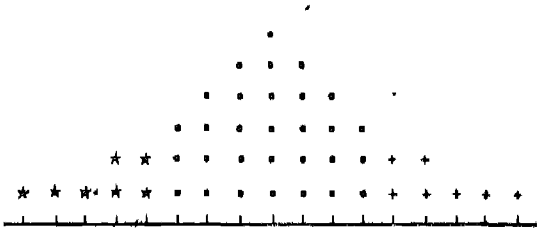


FIG.1 Frequency Distribution of IQ Test Scores

In Fig 1 above, each '*' (star) represents a low IQ score, a '+' (plus) represents a high IQ score and a ' ' (dot) represents IQ scores of children not included in the low or high IQ group After a very short interval, he again gave the same intelligence test to the entire class. The frequency distribution of the IQ scores of children on the re-test is as follows.

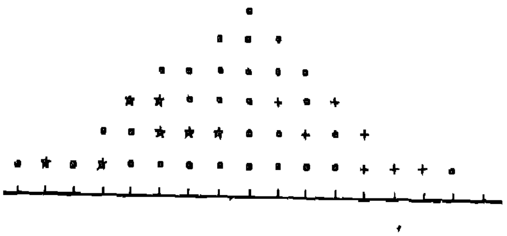


Fig 2 Frequency Distribution of Re-test IQ Scores

A look at figures 1 and 2 reveals that the IQ scores of the low IQ children have improved, while the IQ scores of the high IQ children came down slightly. Thus, the scores of both the groups gravitate towards the mean This tendency of migration of scores of extreme groups (low and high IQ groups) towards the mean is called "Statistical Regression"

How to control Statistical Regression ? In research designs where the sample consists of extreme groups the investigator may divide the extreme groups into their own comparison groups (control and experimental) and observe the resulting differences between them. In other words, half of the group may be randomly assigned to a control group which does not receive IV and the other half may be assigned to the experimental group which receives the treatment. This procedure, of course, does not prevent the experimental group from regressing towards the mean but it will certainly expose the statistical regression art-fact Since both the experimental and control groups exhibit more or less similar amounts of regression, any statistically significant difference betwen the two groups on the post-test could be attributed to the influence of IV.

Mortality

Subject mortality is also referred to as 'attrition'. This refers to the loss of subjects in an experiment for various reasons such as death, accident, etc , during the course of experimentation. Such a loss may have an adverse effect on the comparison of performance between groups Sometimes, if the attrition is more the whole experiment may be rendered useless. This problem is important for two reasons Firstly, attrition may not be random and this creates problems in generalising the results Secondly, attrition may differ from one treatment group to another and if this happens, one cannot be sure if attrition alone is responsible for the results. subject mortality is often a big problem in longitudinal studies making use of 'repeated measures' experimental designs. For example, Kimmel (1974) found that in the longitudinal study of the relationship between age and intelligence, the mortality rate is relatively higher in the case of low IQ subjects than in the high IQ subjects. Such a differential drop-out would raise the IQ scores of the group over the years, leading to the inference that subjects get smarter with age!

How to control the effects of subject mortality? Researchers usually use statistical corrections to deal with it (Schaie,1982). If the attrition is reasonably small, in a group (experimental) some suggest discarding of cases in the control group, taking care to see that the performance of these is more or less the same as those who are lost.

Instrumentation Effects

In experimental research involving repeated measures on one or more variables, it is necessary to ensure that the measuring instrument as well as the measurement procedure do not change from occasion to occasion. If we fail in this, there will be fluctuations in measurement and the results would be misleading and undependable. In some situations where the observers record the responses of subjects, the observers themselves are inconsistent. This may create the impression that the subjects are behaving differently, although, in reality, it is the observer who has changed.

Instrument unreliability, instrument reactivity, instrument invalidity and instrument change over a period of time adversely affect the experiment Instrument reactivity is easier to observe in scientific research rather than in educational and social science research. Instrument reactivity occurs in two ways. Firstly, in some cases instruments directly affect the -subjects and true measurements are distorted. Secondly, instruments may react with treatments and consequently the subjects' responses to various treatments differ.

How to control instrumentation effects? Instrumentation is more a function of the experimenter than of the experimental design. However, instrument reactivity can be dealt with by testing its effects within a design. The Soloman Four Group design is a good example for testing instrument reactivity.

Interaction Effects

Interaction refers to the phenomenon where the effect of an independent variable varies across levels of another independent variable. In other words, an interaction exists whenever an independent variable influences behaviour differently as the tasks, settings or subjects are changed. If this happens, the generalisation of the relationship between IVs and DVs is very much limited. Usually, interaction effects arise in research where a factorial design is used

How to control interaction effects? Statistical techniques and certain experimental designs are used for controlling interaction effects.

Experimenter Bias

This is also referred to as 'Experimenter-Expectancy Effect'. Rosenthal (1966) was the first to take up research on this Data collectors unintentionally communicate in the form of cues their expectations of the kind of behaviour expected from the subjects The subjects pick up the cues and act according to these expectations and the experiment ends up by pointing that IV produced the expected effect on DV when, in fact, something else is responsible for it Whether the experimenter expectancy effect confounds and substantially affects IV is still being researched.

How to control the experimenter-expectancy effect? Like instrumentation the experminter expectancy effect is a function of the experimenter and not of any specific experimental design The effect of the researcher-bias on IV can be removed by using a sizeable number of data collectors. And the researcher variable can be treated as an extra independent variable and statistically removed. Another way to control this effect is to follow what Rosenthal calls the "double-blind" approach. In this the researcher does not have any direct contact with the subjects and he collects the data through data-collectors who are not aware of the research hypothesis. The subjects in the experimental and control groups are also not aware of the purpose of the researcher. Ideally the data-collectors are randomly assigned to conditions so that their expectancies, if any, are randomised across levels of the independent variable

External Validity

External validity deals with the question of how valid the results are when placed outside the experimental setting. Are the results generalisable to real life situations ? For example, Mendel's genetic studies on the sweet-pea readily found a wide range of application to other plants, animals and humans. There are several factors which influence the external validity of an experiment The following are some of them.

Hawthorne Effect

It is simply the effect that experimentation has on the subjects who are aware of the special treatment they receive in the experiment This effect was discovered at the Hawthorne Plant of Western Elective Company, USA. The experimenters at the plant selected a group of workers and introduced certain specific changes in their working conditions such as working hours, lighting conditions, etc. The experimental group of workers were aware that these changes were made only for them and the production increased The experimenters concluded that this increased production is due to the changes implemented. When similar IVs were used at other plants where the workers did not know that they were being treated specially, the work production did not change.

How to control the Hawthorne effect? One way is to limit the knowledge of the subjects about their special treatment. In some studies, the subjects in the controlled group are also told that they are in the experiment even though no special treatment is given to them Another way to control this effect is to allow an adaptation period during which no observations are made

Subject Selection Bias

This sort of confounding most frequently occurs in educational research. It operates whenever the experimenter does not follow the randomisation procedures for equalising subjects at different levels of IV. If there is bias in subject selection, then what is true of the sample may not be true of the population. The purpose of an experiment is to generalise on the basis of sample data to the population as a whole. If there is bias in the selection of the subjects, the sample may not represent the target population and the external validity of the experiment is threatened.

How to control the subject selection bias? The subject selection bias is controlled by assigning subjects randomly to the levels of IV. Random assignment usually ensures that the treatment groups are statistically equal. Randomization does not, however, guarantee statistical equivalence but certainly makes for a highly probable statistical equivalence. Some researcher's also use randomized matching procedures to control this effect.

Multiple Treatment Carry-over Effect

This occurs in designs which use more than one independent variable When more than one IV is given to the subjects, the first IV effect will operate on the second IV, and so on. It is also true that the effect of a certain variable changes when subjects receive several treatements (i e levels of independent variable). The effect of testing described under internal validity is in fact a special case of multiple treatment carry-over effect The experience gained in one testing may be carried over to the experimental condition.

How to control this effect? This is controlled by making use of counter-balanced designs

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Quality Control in Indian Educational Research

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QUALITY control refers to the process of maintaining the quality of end products through certain rational methods of selection and elimination The main purpose of quality control is to separate allowable variations from preventable variations in the end product so that quality goods are readily selected for consumption and those resulting from carelessness, violations of specified rules and other types of controllable mistakes are outright rejected.

With the proliferation of Indian printed materials in the area of educational research, a time has come where clear guidelines are necessary for attaining the minimum standard of research as well as publication and improving the quality of end products of empirical studies in the field of education in India. As Buch and Yadav (1974) observed, "In the name of academic freedom one cannot be allowed to undertake educational research on an unplanned basis any more A developing country cannot afford to have the luxury of 'research for the sake of research'. With the resources which are meagre and the expertise which is limited, development of education on the basis of research findings is possible only with a dedicated leadership willing to take risks and having a strong will to implement" (p.24)

Main Facets of Quality Control

With few exceptions, educational researches in India are mostly repetitive, non-cumulative and imitative in character. On the whole, Indian educational researchers have paid scant attention to the need for preparing a well-planned study design and to the use of relevant theoretical framework in designing and implementing their studies. Partly as a result of this, our operationalization as well as measurement of various concepts have been defective and call for a thorough scrutiny. As a consequence of this, our attainments in technique research connected with development of test, evaluation, curriculum development and examination reforms have suffered a great setback, Compared to other techniques of data collection, adapted versions of foreign tests and questionnaires have dominated the scene but most of these tools have been used without fully knowing their psychometric and other properties.

In addition to the need for preventing defective sampling procedure and misuse of statistical techniques, most educational researchers, with few exceptions, have not cared for conducting pilot studies or cross validation of research findings. The rationale for adoption of a specific research strategy has rarely been specified. The quality of data, their soundness, relevance and consistency have not always been examined About 90 to 95 per cent reports are based on 'one -shot' studies. There are only a few serious attempts to conduct 'process-oriented' research in the area of teaching process, creativity, organizational climate and counselling for the purpose of identifying the conditions and events necessary for development.

The inferential procedures employed by most educational researchers in their empirical studies are also not very satisfactory Very frequently these inferences are arrived at just on the basis of zero-order correlation without employing any statistical or other controls. The inferences regarding the causal chains between the observed and latent variables are also arrived at in a questionable manner. In addition to these, most such published studies have a very low degree of generalizaibility. In actual generalization. most published studies have made what Bakan (1966) calls "the confusion of induction to the aggregate with induction to the general" (p.427)

The various research methods which consist of innumerable specific techniques were developed in the field of scientific research to facilitate the scientists to understand the reality more comprehensively so as to describe and explain adequately as many important facts as possible If in this endeavour the scientists fail at any of the four basic steps, namely, (a) conceptualization (including operationalization) on the basis of previous knowledge and available theoretical framework, (b) measurement, (c) causal inference as well as sound generalization and (d) dissemination of research findings, it will not only weaken the conclusion of his studies but may even defeat the very purpose of his research. Many such failures in the area of Indian educational research are illustrated in the discussion to follow.

Failures in the Area of Indian Educational Research

Disregard for Appropriate Theoretical Framework

In spite of the increasing library facilities, the application of major theoretical frameworks which are readily available from Pedagogy, philosophy of science, system analysis, psychology, sociology, economics, and anthropology has virtually been ignored by most educational researchers in India. That research is greatly aided by a basis in theory is appreciated by most educational researchers in India, but when it comes to the question of formulating a research problem or hypotheses, in most cases, the entire exercise is almost ad hoc and unplanned. The use of an *adequate* theoretical framework or paradign in planning and conducting any research, whether basic or applied, is not always reflected in most cases. Conceptual frameworks generally serve the purpose of summarizing what is already known about the phenomenon selected for the study and in deducing plausible hypotheses for empirical verification and in interpreting the results of the study in a coherent and meaningful way.

With a few exceptions, most published studies in Indian educational research have failed to describe the relationship of a suitable theoretical framework to the problem undertaken for the study. For example, there are now many Indian studies of teacher effectiveness, teacher behaviour and course evaluation. But the leadership theory as proposed by Stogdill and his associates at the Ohio State University (Stogdill and Conn, 1957) has seldom been applied as a frame for the analysis of teacher behaviour as has been done by Norr and Crittendon (1975). In the Indian context, the teacher can be easily conceived as a leader who must gain his audience's cooperation in the classroom in order to achieve the objective of promoting the student's knowledge, skills, values and attitudes. Since the classroom represents a group process and the distinction between the teacher and the taught reflects the division of roles within it, treating teaching especially at the higher levels of education as an act of leadership and using the role-theory in conjunction with the leadership theory may enrich teacher evaluation research and provide it with an effective source of variable selection and hypothesis testing.

Because of the neglect in using appropriate theoretical frameworks, empirical studies of teacher and teacher behaviour in India have been quite unimpressive In the First Survey of Research in Education, Jangira and Sharma (1974) aptly commented that in understanding teacher behaviour, "the attempts have been sporadic. There has been no theoretical framework within which the studies were planned. There is a need to develop a conceptual framework for the same" (p.433). Most of their observations hold true even after 15 years of research in this area

The improvement of teaching practice presupposes meaningful understanding of the teaching process in the Indian context. The search for the main determinants of teaching effectiveness with a view to relating those with elements of the actual classroom situation calls for a sound theoretical framework. A conceptualization integrating the personality of teachers, their cognitive and affective orientation toward classroom process and their academic activity in the context of different organizational climates can also serve as a starting point not only for formulating plausible hypotheses about the relationship between 'presage-process' and 'product-process' but also for designing individual methods of teacher training.

In spite of these advantages, Indian researchers in the aforesaid field have not been able to make any significant break-through mainly because of their neglect in theoretical underpinning. Another example where scant regard has been paid by Indian researchers to theory is the area of affective learning. If education is a way of self-realisation and a preparation for life, as it is often claimed in Indian philosophy of education, it is the educator's responsibility to focus on both the student's cognitive and affective components (Levine, 1973). Rogers (1969, 1974) presented a theoretical position on the effectiveness of human learning and on the qualities of the teacher as a 'facilitator' and helper in blending the cognitive and affective elements in the teaching process. He views the qualities of congruence, role-playing, reflection and positive self-regard on the part of the teacher as a necessary condition for meaningful learning in a permissive atmosphere. Very few Indian scholars have employed this Rogerian affective learning approach in their empirical studies as well as in teaching even though they might have found evidence in the classroom that when students are able to accept and understand their feelings through the educative process, they turn out to be better learners (Buchholzy, 1974).

The conceptual framework for the study

of schooling and teaching as developed by Lundgren (1972,1973) and Kallos (1973) has seldom been applied in India as a basis for the analysis and rational decision-making with regard to curriculum and instructional reforms. The frameworks developed by either Bernstein (1971) or Alkin (1973) also have not been employed for classification and framing of educational knowledge.

Theoretical frameworks have been employed by Indian psychologists and education researchers mainly in the area of cognitive process, motivation and creativity research. A comprehensive review of this literature appears in Mukherjee (1980). Using Hull's learning theory, Chatterjee (1974) provided a model for culture learning where the material or things to be learnt are provided to the learner from a culture different from his own. Some of these studies are reviewed by Gupta (1980).

The use of various mental test theories for test construction is also not made of frequently in the Indian scene except in the recent work at the Association of Indian Universities by Nataraj (1987) who used the Rasch model.

In the area of concept formation, the Piagetian theory has been used to guide the empirical work of Syamala (1961), Vaidya (1969), Aaron and Deshpande (1969), Aaron (1969) Ready (1971), Vartak (1972) and in more recent studies of Narayance Rao (1976), Malani (1977), Bevli (177), Senapati (1985), Passi, Goel and Swarup (1987) as well as Swarup and Thackur (1987).

However, little use has been made to utilize the research findings for curriculum revision in the schools. In the Second Survey of Research in Education, Roy (1979) suggested that every school subject awaits a break-up in terms of its peculiar concepts and methods, and then their grading according to the age and attainments of pupils" (p.284). This would call for a break-up of the conceptual structure of subject-matter of teaching in terms of prerequisite capability hierarchy of concepts and their ordering as is suggested by the Piagetian theory. But such a theoretical approach has not been used in curriculum development or revision.

Among the few Indian researchers notably Das (1973), Pareek (1959,1968,1974), Dave (1963), Sinha 1976, among others in the field of education and psychology who have shown respect for utilization of theoretical systems in their work, one notes some sign of eclecticism in the sense that they have used different theories for different purposes. However, pedagogical and psychological theories have seldom been used in India as a tool in providing a freamework for designing any action programme for social intervention such as in the area of non-formal education, continuing education, health education, population and environmental education in the schools.

In this connection, it must be emphasized that an ad hoc application of any readily available conceptual framework drawn from non-alien cultures may not prove useful. The conceptual framework must be in line with our cultural pattern, ethos and values. We do not wish to advocate any dependence on conceptual frameworks which are not intrinsic to the experience of the society and which tend to straight-jacket all data-gathering and interpretations within models generated mainly on the basis of the western expreience (Nandy and Kakar, 1980, p.159). The theoretical framework to be chosen for the study must be relevant, pragmatic and meaningful not only in linking the research problem with previous studies in the area but also must help in deriving plausible hypotheses and in delimiting the scope of the study. A great many published studies in Indian educational journals reflect total ad-hocism as far as the choice of variables and the types of hypotheses tested are concerned. As Sinha (1979) observed, "the selection of variables often appears arbitrary, and they lack a clear rationale A stray variable is taken up for investigation frequently because similar studies have been conducted by Euro-American psychologists. Therefore, many investigations appear casual, ad hoc, sporadic and lacking in proper theoretical formulation or without a definite practical objective" .(p.347). The rationale for the hypotheses is seldom stated even implicitly and there is often no attempt to state the significance of stated hypotheses to the advancement of research and theory. In the absence of a suitable theoretical framework, the concepts chosen are often defined loosely and their relevance for the study is not indicated. This leads to the second major defect of many Indian studies in educational research.

Defective Operationalization and Measurement

From the studies published in various journals of educational research in India one can readily find many instances of defective conceptualization as well as operationalization and consequently the utilisation of wrong measurement procedures. About 90 per cent of the Indian test construction literature is replete with instances of "psychometric borrowings" and it is therefore no surprise that many of the tools adopted and borrowed from the west are meaningless and irrelevant in our cultural context.

Since the concepts and operations involved in defining educational problems are seldom made explicit, most reports of educational research in India have so far been lacking conceptual clarity. As a result, many hypotheses tested so far have been written in nebulous form and it is no surprise that they remained untestable.

It is well known now that explicit statement of a concept in terms of its operational definition not only suggests the measurement problem involved in it but also gives a description of the index or indices to be used by the investigator. Thus to hypothesize that there will be changes in teaching efficiency as a result of changes in teacher's attitude and adjustment (Samantaroy' 1971) requires not only an explicit definition of teaching effectiveness but also indices of teacher attitude and adjustment meaningful in the Indian context. The study also calls for a specification of the various facets of teacher attitudes and the relevant cognitive (belief), conative (intention to act) and affective (feeling) aspects associated with it. It is not enough to define the teacher's attitude in terms of the total score obtained in a battery of five 20-item scales or the adjustment operationally defined by the scores received in the Bell Adjustment Inventory. A comprehensive definition of each of these multidimensional concepts should be so given that they serve the purpose of connecting a system of constructs having exact logical referants with the world of facts.

It is therefore necessary that the operational definition should reflect the intended concept vertically and be as comprehensive as possible. One may operationally define, for example, the concept of 'social deprivation' in terms of prolonged periods of social isolation This operational definition is quite objective and amenable to measurement. Yet, it is not comprehensive enough to include the various facets of social deprivation including material and familial deprivation and general stimulus deprivation.

Consider another example of inappropriate operationalization leading to defective measurement. Suppose we define the concept of 'prejudice' in terms of 'antagonistic feelings' as reflected on an attitude scale (Sinha and Singh, 1960; Sharma, 1965; Sinha, 1966). Such an operational definition not only fails to distinguish prejudice from hostile attitudes, parochial attitudes and ethnocentric beliefs, but raises important questions regarding the validity of the measurement of prejudice based merely on a verbal statement It is quite possible that such an operationalization might yield a measure of 'social acquiescence', i.e. tendency to agree with any kind of stated generalization rather than prejudice described as a perceptual process in which objects or people are prejudged on the basis of rather meagre and limited information.

Similarly, the concept of 'modernity' has often been defined at the individual level in terms of use of Western utility items such as wrist watches and transistors. The assumptions that the possession of a wrist watch makes the individual punctuality-minded and similarly, the use of a radio exposes the individual to broaden his horizon of knowledge, are not justified in the Indian context (Mukherjee, 1978) Operationalization such as the above ones may have some justification in Western countries, especially in the United States but in a developing country like India it is not valid.

There are numerous other instances where the operationalization of many constructs as used by Indian educational researchers followed the typical American approach. For instance, most studies on achievement motivation in India have defined n-Ach in terms of composite achievement imagery score derived from stories based on the TAT or similar thematic procedure. The composite score is obtained by adding plus and minus scores, e.g Ga + and Ga -. Such scores very frequently arise when thematic materials are scored following the Meclelland scoring system which in India has been employed by Mehta et. al. (1967), Mehta (1969), Gokulnathan (1972) and many others. In this definition, as in the case of other operational definitions, the meaning of n-Ach lies in the procedure used to measure it. However, this definition of n-Ach not only goes against the spirit of the approach avoidance model of Atkinson (1957) but also raises many problems with regard to the validity of n-Ach measures. There is a growing realization now that instead of obtaining a ubiquitous measure of motivational tendency in terms of a composite n-Ach score, the focus should be more on tendencies to either approach or avoid certain achievement-related situations including risks of different degrees.

From the foregoing discussion and example, it should be clear by now that many concepts, theories and tests as used by Indian researchers in the field of psychology and education which were nurtured and nourished in a different cultural soil have readily been transplanted in India without much modification. There is a real need for indigenous thinking on the part of Indian researchers in these fields. Few researchers have ever attempted to challenge the applicability of foreign tests in India on conceptual and empirical grounds.

In the aforesaid context, Dave (1974) rightly observed that "the craze for adopting foreign tests instead of making use of available Indian ones is quite disturbing. The researchers in various Indian universities pretend not to know what is happening and what is available in sister institutions in the country and at the same time seem to be quite conversant with what is happening and available in America, thousands of miles away. As a result, ten different (horizontal) versions of a particular foreign test are available, but absolutely no further (vertical) information is available after its adaptation, even in that particular language" (p.322).

In order to make Indian educational research more indigenous, it is quite necessary that we take up a programme of reconceptualisation and redefinition of many constructs which are currently in vogue. We also require greater sophistication in our concentualisation, operationalization and measurement. Many constructs in education may not be directly measured because these 'latent' variables do not provide sensory data. But we can always measure these indirectly by finding or devising observable dimensions that are related to the latent ones. The task becomes easier and methodologically sound if we explicitly state the inference procedure in terms of the connection between the 'latent' or inferred dimension with the 'proxy' measure. These exercises must be done at the time of planning the study. Numerous mistakes can be avoided if educational researchers in India give more time in preparing a comprehensive blue-print of their projects.

Neglect in the Preparation of a Well-planned Study Design

As stated earlier, most studies in educational research conducted in India during the post-independence period were not properly planned in advance of time. Even now not many educational researchers have fully accepted the simple fact that without a comprehensive project proposal and a concrete blue-print of the study, any research would be a matter of trial and error. Without an explicit well-conceived plan, the selection of variables, their operationalization and measurement and the entire process of data collection and data analysis becomes ad hoc. In the absence of planning, the researcher will have to delimit his study in an arbitrary fashion . Furthermore, the sources of invalidity of the conclusions drawn from such an unplanned study may not at all be controlled.

The study design outlines the complete sequence of steps planned ahead of time to ensure that appropriate data will be gathered in a specific way, taking fully into consideration the objectives of the study and the different factors which are likely to threaten the validity of the study. The design stipulates the appropriate time period for the study so as to permit not only the collection of relevant data, their scrutiny, their internal consistency and biasedness but also an objective analysis of the data according to the stated plan, In the process of drawing any study design, some tentative decisions are made about the possible alternatives in circumvanting certain problems that may crop up in the course of the investigation, as also in implementing the sampling design and the data analysis plan. The proposal is ideally written in such details as if the completed work (without results and discussion) is being submitted for publication. Most of the project proposals submitted for financial grants to the ERIC of the NCERT, the ICSSR, the UGC are far from being such well-conceived comprehensive blue-prints. But it is high time that educational researchers in India should make it a matter of routine to draw out well-planned study designs before excuting their projects. Such an effort will pay rich dividends not only at the time of actual implementation of the study design but also during the time of writing the research report.

Failure in Drawing Proper Samples for the Study

In addition to an utter neglect in using a relevant conceptial scheme and in preparing a well-planned study design, most educational researches in India suffer from the failure to draw a probability sample which would have ensured the generalizability of the findings with an estimated amout of uncertaintity or margin of error involved in inferring about certain unknown parameters of the population under study. Often the researcher even fails to state explicitly the population studied and the manner in which the respondents were sampled. In most cases, the sampling is purposive and drawn from high school and/or college student populations. As such, it does not provide the possibility of estimating the magnitude of sampling error. The data collected on the non-probability sample may help the researcher in refining his/her tools or in sharpening his conceptualisation and operational definition but not in arriving at a valid conclusion based on the logic of statistical inference. Strictly speaking, the assumption of independent random sampling is inherent in all classical statistical techniques that educational researchers in India usually follow. Very little use can be made of the mechanics of statistical inference unless we know the probability of occurrence of any unit being drawn in the sample. This fundamental fact is not known to many educational researchers. As such, it is no wonder that many statistical techniques, especially factor analysis and multiple regression are frequently misused in Indian educational research.

Inappropriate Statistical Treatment of Data

In the area of data analysis also, one can find out numerous instances of extreme violation of statistical assumptions. As a specific illustration, mention may be made of several Indian studies on the relationship between different types of performance (including achievement) and manifest anxiety as measured by some adapted version of the Tayler Manifest Anxiety Scale. Even though an inverse U-shaped function between anxiety and performance emerges from Hull-Spence conceptualization of anxiety as a drive which has received some empirical support in India (Singh, 1968, Sharma,1970), no attempt is made in most cases to compute a measure of curvilinear relationship Instead, product moment correlations are extensively used. Some investigators have used factor analysis which assumes that individual traits combine additively, to data collected for testing psychodynamic theories which assume that different aspects of behaviour combine in a non-additive manner. Similarly, there are many applications of Analysis of Variance (ANOVA) where the independence, homoscedasticity and additivity assumptions have been grossly violated. This reviewer has seen a number of published articles in the *Journal of Education and Psychology* and other Indian journals of educational research where the calculated F ratio for the main treatment effects has been quite close to zero. "Although such values can occur by chance, the occurrence of a very small F ratio can also serve as a signal that the experimenter needs to think more carefully about the experimental situation itself... Before the experimenter appeals to chance or to some obvious failure of assumptions, he might entertain the possibility that the experiment itself is open to suspicion" (Hays, 1963, p.380). These remarks should be fully appreciated by Indian educational researchers who in their analysis of non-experimental and survey data have been finding a very small F ratio. By and large, Indian educational researchers are also not making appropriate use of multivariate techniques. Measures which are intrinsically multidimensional in nature, such as scholastic achievement, intelligence, creativity, learning, job satisfaction, educational innovatioin, deprivation, organizational climate, teacher effectiveness, academic freedom, competitiveness, cooperation, etc. have rarely been subjected in the past to appropriate multivariate analysis even after the computer facilities were available. In addition to analyzing simultaneously a host of variables each of which may be multidimensional in nature, most techniques in multivariate analysis help the researcher to determine either the 'external' structure of the data or to understand the 'internal' configuration of the variables. In addition, it enables the researcher to infer the relationship, if any, between a host of manifest and 'latent' variables, apart from achieving the goal of data reduction. The techniques are also useful in establishing various psychometric properties of the tools used for the investigation

Educational researchers in India are currently making use of multiple regression analysis, factor analysis and multiple discriminant techniques but in many cases these techniques have been misused. This is partly because of the fact that canned programmes ,such as the BMDP or the Statistical Package for the Social Sciences (SPSS) allow these procedures to be used with virtually no knowledge about the limitations, assumptions and computational steps involved in each. Many published studies in the field of educational research reflect such naive, incautious and sometimes inappropriate applications of these techniques. Srivastava (1987) has extensively discussed this aspect of quality control in Indian educational research.

Other Shortcomings

A large number of empirical studies published so far in Indian educational journals suffer from certain general weaknesses, mainly connected with reporting and inference. Since some of these pitfalls are apparently not recognized as such, they will be briefly mentioned here.

Firstly, there are many cases of wrong interpretation of the results of the tests of significance Very frequently, the actual probabitity value obtained is taken as a measure of significance or as the probability that the results are due to chance. Even more serious are the cases where the obtained chi-square value less than or equal to the degrees of freedom associated with it is treated as a statistically 'significant' result

Secondly, there appears to be a wide-spread belief that by demonstrating the statistical significance of reported data, the theoretical or the practical significance (Edwards, 1960) can be established. The most clear-cut examples of these misgivings are reflected in studies reporting small but just statistically significant correlations or differences based on a large sample size where a claim is made that a hypothesis has been 'proved'. One tends to forget that by having a large sample size, for example, of an order of 200,000, any null hypothesis can be rejected beyond the .01 level of significance. The practical significance of a research depends not so much on its use of sophisticated statistical techniques or the positive results of statistical significance but on the clarity of the concepts and the reticle formulation of the problem and the explanation of the results on the basis of available theories

Statistical analysis of the data is *not* an end in itself. It is only *one* of the means to make some valid generalizations from sample data If in this endeavour the researcher fails to arrive at a reasonably valid inference then the very purpose of using statistics is defeated.

Thirdly, Indian educational researchers are often prone to arriving at wrong interpretations of the findings Often cause and effect relationships are stated just on the basis of zero order correlations. It is not frequently appreciated that cause and effect can never be assigned by statistics alone and there are often alternative explanations for most statistical relationships.

Fourthly, it is not always realized that data can be collected quite satisfactorily and analyzed quite correctly and yet the findings may be virtually useless because of the bias in the data resulting from faulty sampling. Detection of a selection bias is generally very difficult and one can only review the sampling procedure to determine if the sample selection favours any particular or special group

Fifthly, all results of significance tests must be reported along with the degrees of freedom attached to each statistic. Educational research literature in India is replete with studies which lead the reader to believe that the results are notworthy, when these untested mean differences or the obtained value of correlation (without mention of the sample size on which it is based) could have easily occurred by chance.

Sixthly, the reporting of a single reliability and/or a single validity coefficient is not very meaningful (Mukherjee, 1985); different types of reporting of reliability and validity coefficients give a complete picture of the psychometric properties of the tests or tools used for the study.

Seventhly, a research report that does not discuss the limitations of the study and the possible sources of bias that might have flawed the study design is an incomplete report The investigator must take the responsibility of issuing a note of caution especially when the situation studies are of the unnatural laboratory type or when too few aspects of the situation or characteristics of the individual are investigated.

Eighthly, the author must avoid a loose discussion of theoretical positions that does not succeed in evolving a systematic analytical framework. There is a tendency common among many educational researchers in India to simply compile a list of quotations from numerous authors without attempting to synthesise these theoretical insigths in the form of a well-integrated framework which can help in planning and implementing the study. This type of citation may sometime give a false impression of erudition but it does not help in making a systematic analysis of the phenomenon under study.

Finally, all reports of empirical studies in educational research must strive to show some balance between theory and data gathering. Whereas the empirical findings are frequently presented in great detail in most reports, the retical analysis is often reduced to near zero. There is not enough recognition of the fact that a hypothesis is judged to be important if it is firmly linked both with a theory and empirical data.

Some 'Guidelines

The various methodological and other pitfalls discussed in the foregoing section have a profound implication for quality control of educational research in India. The increasing proliferation of published materials in this discipline with many such preventable errors must be checked by all means. In order to minimize the probability of such materials appearing in printed form, research funding agencies such as the ICSSR and the NCERT will have to raise their publication standards. All Indian journals publishing articles in various areas of educational research must also change their editorial policies Apart from methodological soundness, all manuscripts submitted for publication must have high degree of clarity, organization of presentation, succitness and be from technical and typographical errors.

Clear writing, fine style, lucid presentation, scholarly approach and a high level of competence reflected in the methodological rigour, theoretical interest, logical appeal, scientific objectivity, and practical orientation of the author all contribute to pleasurable as well as informative reading. The author must have some respect for the audience The author should strive to communicate as clearly as possible with (a) a small group of researchers working in the same area and (b) a wider group of people who are interested in the possible utilization of the results or who work in more peripherally related areas of research. If these basic rules are flouted, the manuscript should be rejected or recommended for revision

All manuscripts for publication in research journals should possess certain basic characteristics, namely, (1) a purpose in systematically disseminating the research through logical organization which is clearly indicated by the use of sub-headings; (2) conciseness and an apparent respect for the reading time; (3) unambiguous and simple vocabulary with technical and erudite words used only when simpler ones would obviously be inadequate; (4) conformity to accepted technical style in tables, terminology, and reference citation;(5) conclusions that are clearly related to the evidence presented The reader should be led, step by step, from a statement of the problem and its retical underpinning, the objectives of the study through a presentation of the methodology, collection of data, analysis of evidence to conclusions and implications.

For sanctioning publication grants for research monographs, funding organizations such as the NCERT, the ICSSR and the UGC must examine the technical soundness of the manuscript and its contribution to any or some aspects of each theory, methodology and design of action programmes. The probable contribution is judged in terms of the development, discovery or refinement of conceptual frameworks, practicable tools, techniques and/or integration of a single study in a planned programme of research or social development to the end that the results become meaninghful in a broad sense.

Besides using rigorous procedures of quality control to check 'information explosion' of trivial and trash materials in the field of educational research, our training programme in research methodology must be improved and strengthened Some training in philosophy of science, logic, mathematics, and applied social science would be also necessary in almost all areas of educational research. It is hoped that improvement in our training programme and procedure in the selection of motivated research workers in educational research would equip the future generation of scholars in this field to complete successfully problem-oriented researches which will have great potentialities for theoretical, methodological and practical import as well as national relevance.

Concluding Remarks

Though disturbing, the impressionistic assessment of the current situation in educational research in India as given in the preceding section is not meant to be discouraging. Educational research in India has been of some use but still there is an urgent need for quality control to check the accumulation of trivial and irrelevant published materials in this field. Editorial and publication grant policies must be revised to check their proliferation. Since the quality of published materials in India is a direct reflection of our standard of educational research and current status, there is a need for evolving some mechanism by which we can direct and guide the nature or quality of thinking in this field. The NCERT and other such agencies can play an important role in this connection.

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Evolving a Guideline and a Critical Frame for Maintaining Quality Control in Educational Research

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EDUCATIONAL research in India, with its beginning in the early 40's, is not considerably old. Nevertheless, with more than 3051 Ph.D. research studies and non-degree studies completed, its quantitative growth has been impressive (Buch and Govinda, 1986, P.7). It is difficult to judge the contribution of research only in terms of the number of studies completed. The ultimate utility of research has to be seen in terms of the contribution it makes in developing generalizations, theories and laws that would help explanation, prediction and control of phenomena. It is not difficult for a person working in the field for quite some time to state that educational research in general has to improve qualitatively in our country. However, this statement does not pertain to those qualitatively good studies that have been completed. The quality of research would be good if the operations performed in it are in perfect conformity with the operations specified normatively..This ideal situation is difficult to obtain However, if the conclusions are to be dependable, there should be a high amount of conformity in this regard.

A tentative assessment of the quality of research and the measures to improve the quality are outlined here starting from the problem selection stage. However, it is right to remember that the assessment made here is based on a few examples from M.Phil. and Ph.D. theses and also in the light of the general understanding of the author of this paper.

Ambiguity in Problem Selection

To give an air of sophistication to their problems, some researchers cast their problem statements in so an ambiguous way that unless the statement in the body of the thesis is gone through fully it would be difficult to understand it. Generally problem selection is not based on problem analysis and the process of narrowing it down. "The educational researchers seem to suffer from a sort of problem blindness. Because of their insensivity and inability to perceive relevant problems in the environment, educational researchers seem to indulge in fabrication of research topics purely based on an arbitrary combination of a few aspects or variables.

This way of fabricating research topics without any relevance either to theory or to practice has resulted in a large number of studies which are neither socially relevant nor scientifically exact" (Buch and Govinda, 1986, p.24).

Generally when a problem is stated the researcher should "stipulate specifically what persons, materials, situations, factors and causes will and will not be considered"(Van Dalen, 1972, p.116). But the researcher no doubt states what would be considered and forgets about giving what would not be considered

Some studies are merely repetitions with change of a few variables and the locales of the studies. There is no effort to develop a "research tradition" where preceding studies would determine the selection and conduct of subsequent studies so that no "gaps of research" prevail in an area.

Baldness of Review of Related Literature

In the review of related research a common drawback in almost every thesis is that the review is bald and it is a demonstration of a chronological list of studies This exercise does not meet the intended purposes of review (as explained by Can Dalen, 1972, p.374), namely, that a researcher brings together the results of the existing research, shows how the studies are related, and indicates where gaps or weaknesses exist that have given rise to the present study. "The purposes of the literature review is to expand upon the context and background of the study, to help further define the problem, and to provide an empirical basis for the subsequent development of the hypothesis (Tuckman, 1972, pp. 288-89). These purposes of review appear to have not caught the attention of researchers. If review is a parading of a long list of annotated studies, it only becomes extraneous, mechanical and stereotyped. Further, strategies of literature searching around key concepts extracted from the problem appear to have become a rare quality of research studies in education Unless researchers do review as per the specifications and the purposes they are meant for, their job is not rewarding.

Methodological Shortcomings

One of the methodological shortcomings of research in education is that the population of a study is seldom defined, the sample is less frequently drawn on precise lines and the studies have almost never selected the correct size of the sample that gives the least standard error of measurement. Olejnik authenticates the above statement thus: "Many researchers in psychology and education are frequently uncertain how many subjects are needed for their research study. A common solution to this problem is to rely on the following rule of thumb: 'Use as many subjects as you can get and you can afford'. This is poor advice because all of the available subjects may still be insufficient for an adequate test of a hypothesis and the inclusion of all available subjects can produce statistically significant differences or relationships even though the differences are trivial. It has been observed that many researchers do not have a sound rationale for the sample size included in their studies.

"The definition of population may present no problems, as when sampling a batch of electric light bulbs in order to estimate the average length of life of a bulb. In sampling a population of farms, on the other hand, rules must be set up to define a farm and borderline cases arise. These rules must be usable in practice The enumerator must be able to decide in the field, without much hesitation whether or not a doubtful case belongs to the population" (Cochran, 1977, p.5). In education, suppose a researcher has to select schools in a district he will be confronted with the problem of borderline cases. Hence, he must be clear about his population. The researcher is to select a sample on efficient lines meaning that he has to resort to a sampling design that gives him maximum precision for a given cost It is better to consult statisticians for precision in this regard.

The fact that a hypothesis is to be stated in population parametre terms is not clear to most of the researchers. That statement of a hypothesis should have to be related to theory is known to only a few researchers. Buch and Govinda (1976, p.25) in their introduction to the Third Survey of Research in Education brought out another shortcoming thus: "A major weakness of the educational research in India is its over-dependence on the use of questionnaires and tests following the typical Anglo-American tradition. This is largely true of all the areas of research except the areas of history and philosophy of education. The reasons are easy to identify. The main reason is the facility they would provide for quantification and further processing, possibly through computers. It is hard to come across studies in many of the areas which adopt the other methods such as observation, case study, content analysis, and participant observation".

Sometimes the tools of research used in some cases are the tools that have not been properly standardized. No research study can be better than the tools it uses. Though such considerations as simplicity of administration, ease of scoring, and appropriateness of norms by no means are important, an overriding consideration has to be given to the problems of validity and reliability while selecting a tool. Such a consideration appears to be missing in the case of some studies.

Educational research can adopt a quantitative technique or a qualitative technique in its aproach and in processing its data But it appears that quantitative methods have been used by the researchers overwhelmingly as it allows the use of statistics, computers, and data analysis procedures that are easy There are instances where the data, that have been collected using qualitative methods, are attempted to be quantified in terms of statistics. This imbalance and this distortation will only jeopardise the interests of research in education.

In quantitative approaches statistics are no doubt helpful to promote the rigour of research. But statistics should not become an end of a research study. "... the increasing use of statistics is not the distinguishing feature of modern social research. Rather it is the increasing precision and reliability of research techniques, and higher standards of proof which have made the use of statistics more fruitful" (Goode and Hatt, 1952, p.314). Some researchers have used statistics rather wrongly also. Where the 'method of least squares' is appropriate, the 'unweihted mean method' has been used. Even when the conditions underlying the use of ANOVA and Product Moment Correlations have not been fulfilled, researchers have freely used them. Unless these shortcomings are overcome educational research cannot claim quality.

In some cases where some data that ought to have been collected have not been collected and in some other cases unnecessary data have been collected. Both these experiences of researchers have been frustrating to them. Therefore before he collects his data, every researcher has to ask himself such questions as these: Are the data going to be collected precisely ? Will the data be reliable? Can the data be verified ? Will the data be relevant, appropriate, valid, representative and objective ?

Yet another point to be discussed under the methodological shortcomings relates to educational implications and suggestions for further research. Educational implications given have to be feasible and they cannot be utopian. For example, if women teachers are found to be more job-satisfied, an educational implication that only women teachers should be appointed is something that is meaningless. Instead a suggestion to promote job satisfaction of men teachers would be worthwhile and also feasible While giving suggestions for further research sufficient caution is not being exercised by researchers. Any suggestion shoud be the result of the study and it should be an outgrowth of the study. Some theses contain extraneous statements such as 'the study should be repeated with a larger sample and the study can be done in a different locale involving more number of variables'. It is not necessary that a researcher who had done research on a particular problem alone has to give these suggestions. Any body could give suggestions of this type.

Training of Researchers

Thus our researchers need more methodological clarity. Stress on achieving this clarity must be laid from the beginning stages where the students of education are introduced to research techniques. It is generally at the M. Ed. and M.Phil. levels that they get introduced to research, both theory and practice. The study of Research Methodology paper and submission of a dissertation should become the requirements for these courses as it is today in most of the universities. The training at this staige is hampered because the facilities for effective training are lacking in the universities and also because university teachers tend to think that it is in seclusion that research progressed. Research activity is essentially a cooperative endeavour and knowledge of research gets widened only through sharing of experience. Hence, discussion of proposals of M.Ed., M Phil. and Ph.D. research in departmental seminars, conduct of summer institutes on research methodology and facilities to exchange research studies between different reseach institutions should be encouraged.

In our training programmes for research we must impress upon our students that research is highly objective and that no researcher would start his research with a pre-determined notion. This point is being mentioned because some of our scholars tend to think that they should get significant results. This is an erroneous impression that they have cultivated. Even if it is a non-significant result, it is also a result and it is a finding. How strong personal biases of researchers would influence the outcomes of research are given in a classic example by Bertrand Russell (1977, p. 32-33) : "..... all the animals have behaved so as to confirm the philosophy in which the observer believed before his observations began. Nay, more they have all displayed the national characteristics of the observer. Animals studied by Americans rush about frantically, with incredible display of hustle and Pep, and at last achieve the desired result by change. Animals observed by Germans sit still and think, and at last evovle the solution out of their inner consciousness" (Quoted in Van Dalen, 1973, p. 41).

Still on another occasion Betrand Russell (1927) had brought out vividly how personal bias of researchers influences their observations : "You say, 'What can you see on the horizon ? One man says, 'I see a ship' Another says, 'I see a steamer with two funnels'. A third says, 'I see a Cunarder going from Southampton to New York'. How much of what these three people say is to count as perception ? They may all three be perfectly right in what they say, and yet we should not concede that a man can 'preceive' that the ship is going from Southampton to New York. This, we should say, is inference'. (Quoted by Madqe, 1953, p.122).

Need for a Theoretical Base of Educational Research

A bone of contention among researchers is whether research should be intellectual-based or it should be directed towards solution of problems faced in practice. Practical administrators are critical of 'ivory-tower' Professors for their lack of understanding of practical administrative problems. Conversely, educational theoreticians underestimate administrators for their anti-intellectual bias. Practice and theory are not exclusive dimensions but they are two ends of a continuum where there is and there should be effective interaction between them (Sax, 1979, p.28).

The above point could be illustrated with the help of two examples. When Von Guericke invented air pump, he found Diet of Ratisbonne a most interested audience. The air pump astounded the Diet by showing that two hemispheres from which the air had been exhausted could not be pulled apart by 14 horses. In this sense the pump served as an intellectual toy. Beyond this amusement, however, observations of the air pump led to the discovery of important facts about the weight of air and air pressure. These discoveries in turn have produced such important practical inventions as the barometer and the thermometer (Goode and Hatt, 1952, p 32)

Quoting Cronbach (1966) Egelhart (1972, p. 31) makes it clear as to how descriptive research helps in decision making, an activity essentially concerned with practice. "Although too much descriptive research in education deals with trivial and ephemeral problems, this does not minimize the value of properly conducted descriptive studies. Such research provides a foundation for the development of theory, suggests problems, and provides facts useful in identifying assumptions, postulates, and hypotheses. While the facts obtained in descriptive studies are helpful in making decisions, the dependable generalizations inferred from adequate testing of hypotheses become even more useful in decision making. They reduce the need for proliferation of descriptive studies on essentially the problem".

Sax (1979, p. 28) is right in opining that "unwillingness to recognise the practicality of theory or the contribution of theory that applied research can make has led to an unfortunate split among educators ..... Practical and theoretical matters should be considered as parts of a continuum with which all should be concerned, rather than as separate mutually exclusive entities". Thus educational research and its quality has to be looked in a total perspective as the one that is explained, and it is this integrated perspective that should guide in upholding research in education. It is not a question of either this or that here, but it is a question of forging the two components for mutual benefit.

Buch and Govinda (1986) in their introduction to the Third Survey of Research in Education are emphatic on this point : "It is high time educational researchers gave up this taboo for theorization and worked towards providing educational variables with sound conceptual bases, leading to the formation of appropriate theoretical framework".

Conclusion

Though in quantitative terms educational research has made good strides in the last five decades in India, in qualitative terms there is much to be promoted in it. The researchers need more rigorous training in research methodology as they lack, by and large, clarity on some critical matters of research. There is a need to develop a theory base for research in education in India.

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Quality Control in Educational Research: Input-Output Relationship

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A comprehensive account of the growth of educational research in India has been given by Buch (1974) and the Second Survey of Research in Education (Buch,1979) has the distinction of presenting the trend reports of research conducted in different fields of education. Yadav and Menon (1979) have analysed the teaching-learning process, the inputs that make the learning outcomes more effective while providing a perspective to the problem of educational research. Educational research, until very recently, concentrated on using a jump-correlational approach and eventually suffered from predictive contaminants. Emphasis has rarely been given to the intervening variables or processes which bring changes in the characteristics of children and the learning outcomes. The trend is changing but a consistent organised research focus has not emerged.

Research in the area of history and philosophy of education has been repetitive and is without the sophisticated methodologies in terms of linguistic analysis and criticism, As a result, substantive findings are lacking Recent interest in Sociology of Education will bring significant improvement in our understanding of the processes involved in the educational sub-system in relation to other sub-systems of society, institutions and problems so that educational research will have greater impact on the society and individual upbringing. In fact, for any planned change we need an empirical base. Research on economics of education becomes imperative and should deal with input-output relations in education so that salient points are taken note of in planning for a change. Educational costs and productivity of education must be understood squarely.

The purpose here is not to express despair over previous research but because institutions, individuals and faculties are interested now in research which provides a basis for development, we should now explore and develop models and stress research on practical problems where we can design intervention programmes which can be effectively applied to classroom situations. The CASE, the NCERT, the University Departments of Education must give leadership in these directions.

Input-Output Dilemma

Research on the production of educational outcomes has produced mixed results although patterns of consistent findings are beginning to emerge. Past confusion has been partly due to the way input-output researches have framed their questions and the methods they have used to answer these questions. In asking whether or not 'schooling has an effect' we might be asking the wrong questions. Of course, schooling has an effect regardless of the results of simplistic data analyses and their simplistic interpretations. School children are exposed to many common experiences. But we can statistically measure the differences if we set into research question in a more restricted manner i.e. do the differences that exist between schools and within schools make a difference ? What effects do specific school policies have on various educational outcomes ?

The point to be impressed upon is that when we want to develop an organised body of research, at the outset a systems thinking must go into it. The inputs are to be specified whether they relate to structural characteristics, demographic variables, and the expected outputs are to be expressed in clear form on the basis of their possible relation with the inputs. Most of our research can be characterised in this way, i.e. input-output characteristics. For example, children coming from lower class homes evidently possess low mental ability, etc. True, we are committing a major conceptual error, such a finding neither increases our understanding of how membership in low SES affects the outcomes nor it tells us what should we do to obviate the ill-effects of the input. We design rarely programmes to affect the output only by being guided by the conclusion based on our research findings which is not more than a mere description of status characteristics. In other words, we have been using the output as the base line data for thinking of designing further steps to change the output and in rare cases we succeed if the outputs are unitary and pure.

To put this in a clear form it looks like the following· Input ________Output _________ (interventions) _________ change input.

We need to pay more deeper attention to the first phase of the relationship, i.e. Input _________Output and a lot of serious thinking should go into it in specifying the processes which determine the output or what we call the intervening or mediating processes. It tells us how outcomes are affected or how certain inputs affect the output. Once we know the processes, designing the programmes to improve the outcomes will be realistic and comprehensive. For example, instead of saying membership in low SES affects mental ability, we can say children in lower class homes do not listen elaborative language from their parents and as such have a poor language ability or verbal ability. Hence, it suggests that if we introduce language enrichment programmes, there will be an improvement in verbal ability. Without knowing the processes that determine relationship, further research becomes a useless exercise from the cost-benefit point of view Hence, we need to develop theoretical models emphasising all possible ways in which certain inputs can or might affect the outputs and seriously pursue investigating these rather than using the jump-correlational approach.

Each researcher can develop his own conceptual model about a problem using systems approach and then proceed for investigating the hypothesized relationships or effects which will be contributing substantially to theory building as the process

Role of Family in Influencing the Characteristics of Children : A Process Approach

Family Life Variables	Intervening or Process Variables	Characteristics of Children
(a) Parent's nationality, education, age, etc.	(a) Child-rearing patterns	(a) Child-characteristics
(b) Parent's setting: SES, occupation, rural, urban	(b) Reward and punishment system at home.	(b) Child's perception and evaluation of parents and siblings
(c) Family size, composition, ordinal position, parents' absence, etc	(c) Cognitive learning models available in home: stress on information processing and stimulus pattern available	(c) Overt behaviour: reaction to discipline, taking initiatives.
(d) Decision-making process between parents, power, and other relationships.	(d) Verbal interaction and language cold. Restricted language system.	(d) Personal characteristics of child in and outside the family/society with regard to adaptive behaviours: learning maturational-social and personal adjustment.
(e) Parental attitudes towards children, child-oriented;	(e) Child's identification with parents and perception of role relations.	(c) Child's intellectual development
disciplinary etc	(f) Parent-child-sibling relationships.	
	(g) Affection and environmental deprivation at home: mother's absence, father's absence, etc.	(g) Child's intellectual development.

model (Panda, 1974) . An example of the model is given above:

It would be possible to generate researchable problems from the process model and this would offer better understanding of the socialisation process of the child in the family and highlight the steps for realistic interventions. A similar exercise can be done for any problem that we undertake for research, thus contributing to quality improvement in research.

This is one side of the input-output research conceptualisation. The next is how we can apply this approach more precisely. Unit of Analysis should be a major point for consideration. Some studies have attempted to explain variation in outcomes at the level of the individual child while others have tried to explain variation at the level of some larger unit such as the school or even the school district. Either of the approaches may be correct from the point of view of the objective of the researcher but often we collect data at one level and answer questions at a different level. In fact, inputs and outputs measured at school level reflect *averages* which can hardly tell how individual students learn.

In research, there should be consistency in the *levels of aggregation*. Sometimes individual outcomes are correlated with average teacher characteristics for a grade within a school. This arises when it is difficult to match students with teachers. Under this situation the effedct of input is under-estimated.

Quite often we come across studies which describe the effect of an input on one of the outputs at a time without considering the possibility that there may be *reciprocal causation*, e.g. intellectual achievement responsibility is a *cause* of, and a *result of*, cognitive competence. Such research problems using *non-recursive models* can take into account the *two-stage least square technique* to permit bi-directional analysis This will add to the precision of the findings

As stated earlier, most of our present-day researches are limited by problems of *multi co-linearity* (correlation between input and unmeasured causes). In addition, studies are constrained by limited natural variances in inputs in some cases. Experimental designs and random assignment might raise ethical or political problems but these are the only ways to permit conclusive findings and increase the quality of educational research. If inputs and outputs are tested at multiple points during the child's schooling, the causal effects of specific inputs can be inferred. This will involve slight changes in the use of Multiple Regression Analysis (Ostrom, 1978). Further educational research should be more diligent in hypothesizing and testing theoretically relevant *interactions* among inputs.

Proxy variables quite often lead to confused relationships between input and output and reducing the predictability of assumptions, for example, knowing that ownership of a home vacuum cleaner is highly correlated with student achievement tells us very little about the educational process. Hence, while selecting the inputs, e.g SES, deprivation, characteristical bases are to be emphasized.

A fact which is readily apparent in our research is a tendency to include new measures of inputs. We try to select tests which are easy to administer, will take less time on the part of the researcher, scoring must be very simple, and preferably group testing procedures can be used. Such predispositions observed in input studies only indicate *crude proxies* for unmeasured causal variables. We should, therefore, use refined and more direct measures of immediate causes while analysing educational outcomes. To be more exact, classroom process variables and family processes need to be examined directly than by inference. Parent's education may be a potent variable affecting achievement but the processes may be how children spend their time in home when parent's educational background is different.

In educational research we quite frequently use standardised achievement tests in measuring outcomes predominantly cognitive in character. Affective outcomes and development of skills which are a little difficult to measure are invariably excluded. As a result research findings become incomprehensive to permit any intervention which will affect the totality of an individual. Further, we might look at structural-characteristics in our emerging social context which might permit a new outlook. Further, many of the achievement measures we use in our research are psychometrically inadequate leading to assessment of *proxy output* measures. In our country such inadequate measures are easy to find.

Underrepresentative small sample and *sample attrition* are quite frequent in our research, in addition to the incidental nature of our sampling procedures. Sample attrition is particularly problematic. For example, if sample attrition (p. 81) due to missing data is confined to a particular subgroup in the sample, the input-output variability will be affected. Even such observations are true in case of extreme group comparisons. Hence, great care must be taken for reducing sample attrition At the same, time power of the statistical tests should be sufficient to detect small effects (Cohen, 1971). This is particularly important when the unit of analysis is the school or classroom (Cronbach,

1976) and many of our research data are under-analysed.

The impact of the observed findings with regard to the implementation must be practical in terms of cost-benefit structure. There may be many more such quality improvement determinants for us to consider but over and above the characteristics specified in Campbell and Stanley (1964). These are but a few indicators with specific reference to input-output research in education.

Coming to the merit part of the conceptualisation of input-output research in education, it can be said that on the basis of observed input-output causal relations intervention programmes are introduced to bring changes in the output. But measurement of change has produced concerns and illusive results because of inadequate and inappropriate data analysis leading to artifacts of measurements.

Measurement of Change

In input-out research it is essential that one should not only consider the design but also the use of an appropriate procedure for analysis of data. Campbell and Stanley (1963) have demonstrated the limitations of one group pre-test-post-test design and static group comparison design both in terms of external and internal validity attributes. At the same time the authors mentioned the precision of pretest-posttest control group design and post-test only control group design for observing change in human characteristics.

The measurement of change has often considered 'gain scores' as well as 'difference scores' to prove the effect of interventions of treatments.

In certain cases, gain scores appear to be natural measures to be obtained. In some other instances, gain scores introduce unnecessary problems and the use of gain scores may not be justified in view of the cumbersome procedure in its calculation. In some cases, where change of behaviour has been reported the statistical calculation has not been consistent and systematic in using appropriate change scores. Therefore, either the difference is marked or accentuated. Hence, from the point of view of quality research output, we must bear in mind the type of analysis to be undertaken.

The simple difference score between pre-test-post-test has several major defects but is a very common reporting procedure in our journals. The simple difference score has a negative relationship with pretest. The difference score is also less reliable. There is no common trait and scale at both points in time.

It is a corrected measure of gain and is primarily a way of singling out individuals who have scores more or less than expected. A residual score 'R' is obtained by substracting predicted score 'Y' from the observed posttest score. The latter is obtained from the regression equation, i.e. regression of Y on X. The zero correlation between pretest and residual score is seen as a major advantage over the difference scores. The reliabilities of residual scores are somewhat better than that of the difference scores but they are still small whenever the pretest and posttest correlations are large. Hence residential scores are not preferred in analysis of change.

Gain scores have been most appropriate in analysis of change (McNemar, 1958). But Richards (1975) has demonstrated that each of the scores has certain advantages. On the basis of the correlations between estimates of growth and true growth, the simple difference socres correlated almost well with true growth (residual or gain scores). Hence, simple difference scores are easier and meaningful but it can be used only when pretest and posttest scores have equal reliabilities

By estimating the reliabilities of the absolute scores in the pretest, posttest, and retention posttest stages as well as their correlations it was possible to obtain the true gain scores, after eliminating the regression effects, by using the following formula (McNemar, 1962)

$$\bar{G} = G^1 - R_{gg})\bar{T} - \bar{X}) + r_{gg}(Y-X)$$

where $\bar{G}$ = The true gain score

$G^1 = \bar{Y}-\bar{X}$

$\bar{Y}$ = The mean of posttest score

$\bar{X}$ = The mean of pretest score

r_{gg} = The reliability estimates of the difference scores which is found from the equation.

$$r_{gg} = \frac{\frac{r_{xx} - r_{yy}}{2} r_{xy}}{1 - r_{xy}}$$

where r_{xx} = The reliability of pretest absolute scores.

r_{yy} = The reliability of the posttest absolute scores

r_{xy} = The correlation coefficient of pretest and posttest scores

Group differences or treatment effects have to be analysed depending upon whether groups have been formed by (a) *random assignment*, or (b) by arbitrary method. In the case of treatment group the *post-test only* is perfectly suitable as a measure of change. The pretest scores increase the precision of an experiment but it depends upon how the pretest information is used as well as the relationship between the pretest and posttest scores Pretest scores are used for blocking, using analysis of variance for the post-test scores. The difference score approach is the least precise, whereas the analysis of covariance is most useful provided the pretest and posttest correlations are more than six (Feldt, 1958). Usually such co-efficients are higher than seven . But when the assumptions of linearity or of homogeniety of regression seems questionable, it may be perferable to use the pretest as a blocking variable rather than as a covariate. There is very little justification for using difference scores.

Sometimes random assignment is practically impossible Children cannot be randomly assigned to a school. In such cases, there might be pre-existing group differences which might explain the change or treatment effect. In such situations *differences* score or analysis of covariance is used. Richards (1975) observed that with non-random assignment simple differences scores and residual gain scores worked about equally well but where large pre-existing group differences exist this will not work, including a situation where there is no treatment effects. Lord (1967) has shown that in case of performed group analysis of difference scores use of covariance has led to contradictory findings.

In case of single group designs analysis of variance or a simple test serves the purpose of establishing change by examining the tenability of null hypotheses, i.e. hypothesis of no change. There are many other restrictions that can be imposed on the nature of the data and the design of the study.

When we scan through the pages of some of our Indian journals and see research reports on behaviour change and treatment effects, with very few exceptions, the analyses of change have been done using wrong procedures. Unless such reporting of results is checked, the quality of educational research will not improve.

Researches on Understanding the Process Variables

For the last several years we have been engaged in conducting a few studies to understand the dynamics and processes which mediate the development of certain behavioural characteristics, cognitive competence and personality patterns of children coming from underprivileged home background (Panda, 1981). Our conviction is that there is no direct relationship between the SES background and children's abilities in a developing society where there is rising expectation, class consciousness and a dire need to grow. An understanding of how the various characteristics of children are shaped in a lower class home will certainly clarify the hidden curriculum in the lower class home and permit interventions to operate with a view to developing an ethno-ecological understanding of human behaviour.

One such investigation dealt with the parental life style and development of cognitive, affective and personality characteristics of elementary school children coming from lower homes (Panda, 1982). The results were interpreted in terms of sociological, psychological and demographic milieu of the underprivileged homes with increased class consciousness and role expectation in the emerging Indian society where the down-trodden tries to establish his fundamental rights and strives to grow while parents remain tradition bound and demonstrate their belongingness to class, the younger generation use underprivilged milieu as a defence to rise and grow. A new kind of hidden curriculum is slowly and surely emerging and influencing the characteristics of school children who are coming from underprivileged homes. In the changing social order and rising expectations, the children look for the future and probably this struggle offsets the ill-effects of underprivileged home memberships in a modernising society which permits acculturation of values. These challenging interpretations definitely deserve further consideration in terms of educational implications, research and innovations.

How meaningful are these findings from the point of view of classroom applications? Or, what do these mean to practising teachers and educational researchers ? These are certain relevant questions one might ask but the answers are obviously challenging and difficult.

First of all, parental life style variable has influenced the development of characteristics in children in the predictable direction so far as the structural characteristics are concerned, but with regard to expectancy, achievement orientation, life style, and locus of control the relationships are either negative or zero.

These lead one to expect that membership in an under-privileged home in itself does not produce much deficits in personality and cognitive characteristics because the children in school compare themselves with others. Instead of being teased, they try to compensate their deficits arising out of lower socio-economic educational milieu at home. This is probably the indirect effort which a modernising society brings among these for whom modernisation schemes are meant. This is a powerful conclusion which needs to be substantiated by further indepth research.

The children no longer cling to their social class and exhibit much of dependent prone behaviour which can be inferred from the data on characteristics of children.

Hence, for a teacher it tells that the hidden curriculum in the lower class home is no longer deficit prone psychologically though physically indexes are confusing . Hence, in the classroom instruction there should be emphasis on development of favourable social-emotional climate where creativity can be fostered, self-concept may be enhanced, achievement and adjustment may be raised and intelligence can be properly developed The teachers might tell stories that bring success experiences gradually, ask children to look ahead, do not permit discriminating children coming from the underprivileged homes, will find emotional anchorage and will shine to a considerable degree. If, on the other hand, teachers are guided by self-fulfilling prophecies, the situation would be devastating from the point of view of children The findings tell us that lower class or underprivileged children will function better if we take these children as children, not as children at risk which is very often true

It does open possibility for parent counselling either through mass media or through parent-teacher associations. In fact, the findings wide-open many serious research considerations since this is a single study where the observed findings are contrary to expectations, i.e. instead of a clear-cut positive relationship between most of the parental life style variables and children characteristics the correlations are either negative or zero.

There is no differential relationship between fathers and mothers with regard to male and female children which is true in middle class homes. Hence, it is for the researchers to think for making indepth study on the dynamics of the achieving process of the underprivileged children in a developing society where class consciousness is steadily disappearing and a new consciousness is emerging, i.e. we can do whatever man can do. The present findings lie at the heart of this formulation which future researchers can probe and prove.

It suggests further that when abilities are interrelated among these children and the scores are higher than the average, it may be worthwhile to find out aspirations of the children brought up in lower class homes, the psychological reasons for dropout from the school system, because middle class children with a stigma or a label quit sitting together or even seeing each other.

It is true that physical facilities in home do provide a score for furtherance of psychological characteristics in children but it is quite conceivable when facilities outside compensate the depriving states. The earlier studies which went to establish a deficit as well as difference of interpretation to the lower class structure may not longer remain true where most families belong to underprivileged homes. Hence, instead of attributing deficits to physical, it is a desirable slip to see how untouchability acts as a deterrent to the well-being of lower class children. Case studies may be undertaken to highlight the self-perceptions of the children in underprivileged homes at different levels of development or education which may help us to know in detail the process of growing up in an underprivileged home thus contributing to an ethno-ecology of development. Self-perceptions of these children in interesting school settings may be a worthwhile undertaking. Status surveys are meaningless at this moment, rather insight into the processes causing them to grow and thereby engineering such processes would be a more fruitful step from the research point of view'

Malnourishment is the mediating variable between membership in a lower class home and characteristics of children brought up in those homes. Although the physical indicators of malnourishment can be obvious and observed directly, its impact on psychological characteristics need to be studied and specified. There is no denying the fact that at the primary level many children attend school without normal food intake. Therefore, attempt was made to investigate the effects of malnourishment in the development of self-concept, adjustment and cognitive functioning of the children reading in elementary schools and coming from poor homes, no matter whether they come from rural or urban background. Conducted by Dutta in 1978, this study has highlighted the ill-effects of malnourishment on cognitive and affective functions of children and has demonstrated that membership in a high caste offsets such ill-effects.

The present study was specially designed to include children who would be fairly representative of their population and malnourishment was obviously present among them as they belonged to the poorest community. This study had included two extreme groups from the caste hierarchy of the Indian society, to know if caste contributes to further the effects of malnutrition or offsets its adverse effects.

Studies in this area are very limited in India. A few of these studies have taken into account the behavioural aspects such as absenteeism, dropouts and the cognitive competence of Indian malnourished children but rarely has an attempt been made to study the relationship between malnourishment and affective development. In the present investigation an attempt was specially made to study the relationship between malnutrition and self-concept and personal-social adjustment and the results are quite convincing in this regard

From all the points of view it is clear that in addition to biological and economic factors, social factors, operate conjointly to produce malnutrition and cognitive and affective incompetence among children. To elaborate this view, it can be said that in India, a caste-dominated society is prevalent. The caste distinctions continue to remain as part of human nature and social structure all over India. Members of different castes are expected to behave differently and to have different values and ideals. The caste system with its hierarchy appears to be at the root of Indian school structure which determines the social status and occupations of Indians belonging to poor communities especially in rural areas. The Brahmins are a privileged class with many advantages in the villages as they occupy the highest position in the hierarchy. Therefore, Brahmin children have superior cultural heritage because they are born in the highest caste. Even among the poor rural community the Brahmin children enjoy certain privileges over the Harijans, though the income of both the families is equal. Therefore, the present investigation emphasizes that caste membership should constitute an important component of the socio-cultural model of malnourishment. Residential background is not likely to contribute substantially to an understanding of the malnourishment effects. A socio-cultural explanation of malnutrition in relation to cognitive and affective functions is suggested.

Throughout the study the effect of caste is very pronounced at different levels of malnourishment and in relation to cognitive and affective functioning of low income group children. The severity of effect of malnourishment varies according to the caste membership. The Brahmin children suffer mostly from primary malnutrition but in case of the Harijan children both primary and secondary malnutritions are present, because of the incidence of diseases and ignorance of healthy habits. This would be found both in the urban and rural samples.

The Harijan children are found to be inferior to the Brahmin children in self-concept, personal-social adjustment and cognitive competence, though the income level and area of residence are same. Whether lesser severely malnourished, the Brahmin children are found to be more competent in their cognitive abilities involving short term memory, auditory visual integration and reading speed which shows their linguistic competence. The Brahmin children are also found to be superior in their reasoning and thinking capacity Besides the caste factor, parental expectations also contribute to the higher cognitive and affective functioning of the Brahmin children

Hence, for an accurate assessment of the relationship between malnourishment and cognitive and affective functioning along with the socio-economic factors, caste membership, parental expectancy, educational atmosphere of the house etc.may be included under Indian social situation where poverty and malnourishment are widespread. Future research may include designs appropriate enough to test hypotheses to be generated from a socio-cultural model although the biological basis of malnourishment should alway provide the basis for such investigation.

Researches on Intervention Programme

One of the major thrusts in our research programme has been to plan for changing human characteristics with a view to bringing improvement in the school achievement of children especially of those coming from the deprived sector of the community. Keeping this objective as the frame of reference, a few studies were planned. One of the most significant works that has been recently completed was to experimentally introduce intervention programme on attributional process to increase intellectual achievement responsibility, related characteristics, and school achievement among elementary school children coming from lower socio-economic strata (Ray, 1982). The major objectives of the study were;

(a) To measure the intellectual achievement responsibility of low income group elementary school children reading in Class III and Class IV.

(b) To introduce intervention programme at four different stages which are equally spaced in terms of time.

(c) To observe if changes in the attribution process have significant relationships with mental ability, cognitive competence as revealed by academic achievement and other related attributional processes.

The results of the effect of the intervention programme were very straightforward and conclusive in demonstrating the effect of the programme package on change of intellectual achievement responsibility as well as related variables where self attribution has to play a significant role These amount to the spread of the effect of the programme package and the results were interpreted following the concept of attribution as illustrated by Crandall and her associates and other attributional theorists.

The results of the study are educationally meaningful and sound. The suggestions that emerge from the observations can be translated into action through teacher behaviour and pupil reactions. In a classroom situation, especially when children are externally oriented, lacking in positive self-concept, and high n-ach, they can be told success stories emphasizing self-attribution, causality, and objective perception of self. They can be made to feel the worth of success through games, set their goals, discriminate tasks and know that success depends on effort than on chance. May be in a regular school, emphasis on teacher behaviour emphasizing and pointing out the effect of effort on the part of the pupils would seem to be a good strategy for increasing mental ability and school achievement. An excursion into the tasks used in this study would help a teacher develop his own skills and competence in devising tasks for helping the children to increase their internal responsibility and success in academic tasks. Such a focus can be provided by each elementary teacher, no matter whether the children are drawn from deprived settings, normal settings or enriched settings, since these attributional characteristics which are developmental in nature and the process of development can be accelerated to a considerable degree Of course, for deprived children the need is more obvious.

In our school system this practice may prove more useful because what goes on usually in our classroom can be categorised as chance-oriented behaviours and a tendency to conform them to see more into it and try to succeed. The efficacy of such intervention models through teacher behaviour has already been demonstrated by de Charms (1969) but the present study has its original contribution in extending the thinking to the area of intellectual achievement responsibility situations and related attributional processes, and the findings demonstrated the relationship between attributional processes, ability, and achievement measures. Further research directions have been stated to clearly establish the interrelationship between various attributional processes.

While investigating the correlates of school achievement we invariably came to the conclusion that analysis ability or analytic information processing habits predict school achievement to a considerable degree (Panda, 1982). Quite surprisingly the research literature on cognitive style is replete with over 5000 studies which are of status type, trying to establish correlations but very seldom focussed the attention on change. Hence, one of the studies that we designed was to acquaint the children with various problem-solving strategies and see if their analytic habits are in any way affected and if so whether they lead to improvement in cognitive processes (Dash, 1982).

The objectives of the study were to measure the cognitive style of elementary school children; to demonstrate the effects of problem-solving strategies; decision-making, simultaneous scanning, conservative focusing and facus gambling on the modification of this style, to examine the persistence of the effects; and to validate the finding against the measures of reflection-impulsivity, school achievement, simultaneous processing habits and concept learning.

Taking together, the results of the present study reveal the accuracy of measurement of cognitive style of elementary school children at different occasions. Moreover, the distribution of the scores of the cognitive style tests as depicted by CEPT is akin to normal distribution. The results further show the usefulness of adopting the five information processing strategies on the modification of the cognitive style of these children.

The decision-making strategy is found quite effective in modifying field dependence among elementary school children. The children trained in using this strategy not only showed better performance in the CEPT scores, but they exhibited more or less similar performance in measures of school achievement MFFT(time) and tasks of concept learning. Moreover, the modified effects of this strategy on the field dependence and the above measures are durable in long run However, this strategy is not found effective in modifying MFFT (error) scores, scores of figure copying tasks and functional concept learning scores.

The simultaneous scanning strategy is effective in modifying field dependence as well as school achievement, simultaneous processing habits and concept learning behaviour. The effectiveness of this strategy is found to be durable in modifying field dependence, school achievement and concept learning. However, this strategy is temporarily effective in modifying the scores of figure copying and it is not effective in modifying the scores of MFFT with respect to both response time and error scores.

The strategy of successive scanning is found useful in modifying field dependence as well as school achievement and concept learning tasks. The modified effect of this strategy on the above measures persists for long. This strategy is not found effective in modifying impulsive behaviour in respect of both response latency and error scores.

The conservative focussing strategy is observed to be effective in modifying field dependence. The children using this strategy also showed better performance in scores of. MFFT (time), school achievement and concept learning tasks. Moreover, the modified effect of this strategy is found to persist over time in respect of field dependence, impulsivity, school achievement and in learning of concepts. However, this strategy is not found effective in modifying MFFT (error) scores as well as scores of figure copying.

The strategy of focus gambling is found quite effective in modifying field dependence. The use of this strategy is also found to be effective in modifying impulsive behaviour, school achievement and in learning of concepts. Moreover, the effect of this strategy is found to be durable in modifying field dependence an well as impulsive behaviour whereas its effect is temporary in modifying school achievement. This strategy is not found to be effective in modifying MFFT (time) scores as well as the scores of figure copying tasks.

On the basis of this experiment, it was found that the field-dependence-independence cognitive styles are subject to modification, and that this modification can be brought about in the majority of elementary school-going children by short term training in the form of classroom instructions and superior performance in the CEFT and majority of problem-solving measures. Additional research will be required to determine the extent to which these materials can benefit these children.

The cognitive style of children at the moment appears to have clear implications for educational practice. The most important for the issue of cognitive sytle is in the performance across tasks in which the surrounding organised field has influenced the child's perception of an item within it.

That is the reason why children who are more field dependent are better in learning the social studies material and languages, than their field independent peers. However, these two groups of children are not basically different from each other in sheer learning ability or memory. To the extent that the inferiority of field independent children with such materials is a function of lack of attention, and fixed mental set, rather than lack of abillity, their performance can be made equivalent to that of field dependent children by adopting the specific information processing strategies. The evidence suggests that field independent children tend to learn more than field dependent children under conditions of intrinsic motivation. However, if these field dependent children are taught through the use of information processing strategies, it is expected that these children develop more insight into the subject-matter and thereby develop more and more intrinsic motivation similar to their field independent peers Frequently, in learning, the material to be learned lacks clear inherent structure, and it requires organisation as an aid to learning. Field dependent persons are likely to have greater difficulty in learning such materials. The field independent children are more likely to provide the mediating structural rules that are needed to facilitate learning . The instructional processes, using the five information processing strategies, developed the habit of organisation and structuring the complex pattern through the training programme. It is, therefore, quite likely that children, trained in the strategies of information processing, learn how to organise and structure the materials to be learned. When this ability is developed through training them, the field dependent and field independent children are not likely to differ in their learning. It appears during training that some children express their need for external provision of structure. This suggests that the teachers should recognize such children and adopt the specific information processing strategies to help such children organise and structure the learning materials.

There is still another line of evidence which suggests that field independent persons are more likely to use mediators of their own design, in dealing with learning tasks, whereas field dependent children depend on the characteristic of the learning task. This evidence comes from the studies of concepts. The children form a hypothesis as to what the concept may be and then they test the hypothesis by applying it to examplers of the concept class. If the hypothesis is not correct, a new hypothesis is formulated. This involves the use of information processing strategies. The present study suggests that when proper use of the information processing strategies is made, then field dependent and field independent children are not likely to differ in search for the correct concept. In a different model of concept attainment the child is conceived to have a more passive or spectator role. When the training strategies like those used in this study are carefully adopted, the constant relevant features of the concept are gradually attended by the child and the more variable and irrelevant features of the concept class are gradually washed out.

In the process of formation of hypotheses about the nature of the concepts to be learned, noticeable cues are, in general, more likely to be used than cues that are not very noticeable It is known that concepts defined in terms of more salient cues are generally easier to learn than concepts defined in terms of less salient cues. Field dependent children are responsive to the dominant arrangement of the field as given and are not very likely to depart from that arrangement. These children, when exposed to the information processing strategies of the kind used in the study are able to give more attention, change their fixed mental sets, and are in a position to focus the positive instances more fully. The instructional procedures of this kind will surely help these children untill they reach some criterion of success in their guesses. The children trained in this manner will tend to sample more fully from the array of cues objectively available for concept definition on the basis of this cue sampling behaviour. The children exposed to the information processing strategies are expected to learn the concepts more rapidly. On the part of the teachers and parents the relationship between field dependence-independence and concept attainment is very important, because of their interest in having children learn concepts, rather than facts alone The information processing strategies found effective in modifying the cognitive style of children may aid to overcome their domination by salient cues It is quite reasonable to expect that as teachers become more aware of the ways in which relatively field dependent and field independent children learn concepts, they may become more effective in adapting instructional procedures to the needs of these kinds of children. Beyond encouraging teachers to adopt their teaching to students as they find them, it may even be hoped that the teachers find ways of helping students diversify their learning strategies. The findings of the present study give some encouragfement to this hope.

The characteristics relevant to the teaching situations are worth mentioning. This situation originates from a more social and impersonal orientation or from more social and abstract curriculum. The teaching situation includes the extent of interest which teachers take in interaction with others and their own internal cues. The class discussion has been judged by more or less presentation of teaching material. The effectiveness of the information processing strategies on the modification of field dependence suggests improvement not only on the teaching methods of teachers, but the change in their attitudes, beliefs and expectations as well. If a particular teacher finds some children not showing better performance in the abstract nature of contents, then he may take recourse to various problem-solving strategies suitable for the pupose. Similarly if one finds the children weak in materials involving social orientations, then he may attempt to follow a strategy in order to provide more orientation into this content. The subject teachers may feel that informing the children when a response was incorrect, in addition to telling them why it was incorrect, and finally adopting a strategy within the purview of the material presented will be effective in enhancing the children's learning. Obviously, correct feedbacks are provided to the children by the traditional pattern of teaching. However, it is quite likely that if a proper strategy is systematically followed, in addition to the existing approaches, then the performance of the children will be much improved. Sometimes it is observed that the teachers become hostile towards some children while dealing with the learning tasks.

From the findings of the present study it is suggested that when the teachers find the children not dealing with their tasks effectively, they should try suitable information procesing strategies rather than expressing hostility towards such children. On the basis of the findings of the present study, it is quite possible that by sensitizing teachers to the implications of the modification of cognitive style, their adaptability as well as their use of diversified teaching approaches can be increased.

Apart from the learning behaviour of children and teaching behaviour of teachers, both teachers and students are engaged in a continuous process of interactive dialogue. The modification of cognitive style of children through the use of information processing strategies is likely to be more informative in the teacher-student interaction process. Instead of neglecting some children during class discussion, teachers may shift over to more and more probing questions to bring these children to the periphery of class discussion. This will enhance greater interpersonal attraction of the teachers and the taught. It thus seems reasonable to interpret the findings of the present study for better interpersonal attraction among teachers and students. This will reflect better student performance as well as better classroom discipline.

Another study was done to determine the effects of State-Trait anxiety on personal-social adjustment, intelligence and classroom achievement of elementary school children. The following problems were investigated.

a Incidence of state-trait anxiety among elementary school children,

b Relationship betwen pupil's anxiety and pupil-adjustment,

c. Relationship between pupil's anxiety and pupil's intelligence,

d Relationship between pupil's anxiety and pupil performance, and

e. Formulation and application of certain cognitive instructional materials to reduce pupil-anxiety in the classroom and study the effect of such intervention programme upon their adjustment, intelligence, and classroom achievement.

The findings of the study were:

The anxiety scales, A-Trait, A-State, GASC and TASC showed a high degree of split-half reliability.

Children at elementary school stage showed the experience of trait and state anxiety distinctly. The trait anxiety level was higher than the state anxiety level with children at all educational levels. There was also the difference between these anxiety scores of children varying in educational levels.

Children's GASC scores were higher than their TASC scores.

There was no interaction between general and test anxiety and educational level.

Both trait and state anxiety had significantly negative relationship with adjustment of elementary school children.

There existed a low negative correlation between trait anxiety scores and intelligence test scores of children at the elementary school. Similarly, a low negative correlation between their state anxiety and intelligence was found

Trait and state anxiety both were negatively related to academic achievement of school.

Anxiety level of elementary school children is reduced as a result of intervention.

Intervention programme improved the adjustment and academic performance of children at the higher levels of school by reducing their level of anxiety. There was no difference between anxiety scores of children varying in educational levels.

The early school, years, ages 6 to 11, have been recognised as very crucial in one's life. They are the years during which the child develops feelings of 'industry' or 'inferiority' It is in these years that the child learns to relate to peers, to play by rules, and to perform academic tasks. Reward for learning and assistance in learning lead to industry. Excessive criticism and high standards of instruction, on the other hand, lead to feelings of failure and inferiority.

Further, in the primary schools in India, the dropout rate is very high. Children at this level drop out on economic as well as psychological grounds. The school climate fails to meet their psycho-social needs. Lack of reward in learning and proper attention from the teachers creates a repulsive attitude towards school and school learning among young children. Severe punishment by the teachers makes them fearful. Children at this stage have also various kinds of irrational beliefs and fears towards animate and inanimate objects. These factors combinedly contribute to the development of anxiety in school children. The findings report the presence of anxiety in elementary school children. Anxiety is harmful in its effects on the development of personality and cognitive characteristics. As also reported in this study, anxiety adversely affects school performance and personal-social adjustment. High anxiety leads to poor academic involvement Since we need that primary education should be universal and successful without any dropout, care should be taken that children will not develop frustration and anxiety while in school

Curriculum, method of instruction, text-book, classroom environment and evaluation procedure should be chosen keeping in view the children's abilities, interests and maturational factors so that they will not contribute to the development of anxiety Teacher-pupil relationship is a very significant factor in this context. Warm and affectionate behaviour of the teacher helps in proper emotional development in the child The study revealed that anxiety has a negative influence upon adjustment. Excess anxiety at the early stage gradually leads to personality disorders in later life Therefore, teachers should be sympathetic, affectionate and loving to the children.

In spite of various preventive devices, there are enough chances for the children to experience anxiety. In such cases, we are in search of a means through which children's anxiety could be reduced. There are various techniques developed by the researchers which can be utilized for reduction of anxiety. Study counselling, providing memory support during the examination, reassuring the child that his examination mark will not be considered for evaluation, training the child to concentrate his attention on the task at hand through exhibition of models, desensitization, programmed learning, cognitive therapies like self-instructional training for developing insight into one's maladaptive thoughts , self-verbalization, external verbalization and many other techniques have come-up. But none of the techniques is suitable for the teacher to use along with his daily instruction in the classroom. Moreover, children of elementary schools are not able to be subjected to self-instructional training or evaluate their anxiety level or capable of self-verbalization. Therefore, it is the teaher who will have to restructure their irrational thoughts and he will have to do this along with his daily routine instructions inside the classroom. Hence, we are in dearth of a more suitable and easier method of reducing young children's anxiety. At this juncture, the story telling techniques of cognitive mediation warrants consideration. The findings suggest that the story telling technique of cognitive mediation could be fruitfully used as a method of anxiety reduction. This observation might suggest some concrete solutions to the educational administration to control the dropout rate at the primary school level.

The findings of the study have also revealed that the kind of cognitive therapy tested in this study attracted the students and were appealing. They have successfully increased their adaptive behaviours. This suggests that the proposed method could be used to deal with the behavioural problems and problems of motivation in and outside the classroom. This experiment warrants to be tried out by the teachers in which they themselves can prepare the instructional materials. This method is not only useful in promoting academic achievement but also some behavioural manifestations

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Psychological Testing in India : Reflections on Some Issues in the Educational Context

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ONE of the most pervasive activities of psychologists has been the use of different kinds of measures in appraising intellectual and personality characterstics of the individual as well as of his attitudes and opinions. Various kinds of psychometric and projective measures have been devised and are in widespread use not only among research psychologists but also by those who are concerned with different practical problems that require the assessment of the psychological qualities of the individual. Demand for such professional appraisal has led to the development of an infinite variety of psychological tests for measuring the intellectual, cognitive, motivational and personality qualities of the individual. These measures have become the chief source of psychological data both for research and practical purposes.

Use of psychological tests in human assessment has had a phenomenal growth in the West. Looking at their widespread use and realising their commercial possibilities, people from the business world and sometimes even charlatans have been attracted towards them It is, therefore, not surprising that we find mushrooming of all kinds of tests—good, bad and indifferent—all around us. India has not lagged very far behind. Looking at the development of the discipline as a whole, psychological testing has been probably the most popular. In fact, work on test development seems to have started about the same time as in England and the USA i.e. during the second decade of the twentieth century. Adaptation and development of various kinds of psychological tests and attitude scales have been so popular that for a long time in some centres and universities, psychology and test development were considered co-extensive

A summary appraisal of human assessment on the Indian subcontinent reveals that though test development started almost contemporaneously with a similar movement in the West, the outcome has been very different. While in the West some excellent techniques for human appraisal were produced, in India the results so far have been somewhat disappointing The reasons for disappointment have been the sporadic and unsystematic nature of development, and almost a total dependence on the West both for ideas and technology of testing Indian test construction literature is replete with instances of 'psychometric borrowings' from the West that are irrelevant and meaningless in our cultural setting. There is an 'implicit assumption that the definition of those concepts and their measurement as proposed by western research workers will also hold good in our cultural context' (Mukherjee, 1980, p 6) Researchers have not always realised how difficult it is to transfer concepts and tools wholesale from one cultural setting to another Tests and measurement based on western concepts and their adaptation and use in a different cultural setting can raise innumerable questions After a thorough analysis, concepts underlying the tests require to be defined in the proper cultural context But researchers have seldom devoted, except on rare occasions, attention to the problems of human assessment that arise in the Indian socio-cultural context; and there has been little sustained effort towards their definition and solutions. Summing up the situation, Mukherjee (1980 p.4) remarks that 'a general impression that one is likely to get from reviewing published Indian studies on psychological research techniques and especially test construction as also personality assessment (including attitude measurement) is that much of it is trivial and much of it is methodologically deficient." There is a neglect of proper conceptualization and of the theoretical base, and absence of high order rigour in methodology.

Historically, Christian missionaries were the first to user psychological tests in India. Up to 1921 the missionaries who were engaged in educational work displayed interest in the construction and validation of some well-known psychological tests. As pointed out by Mitra (1968) in his review of tests and measurement in India, it was Dr Rice who first attempted the standardisation of Binet-Simon in India in Urdu and Punjabi. Kamat in the thirties adapted the 1917 version of the test in Marathi and Kannada. Shukla in the forties developed the Gujarati version. Professor Mahalonobis was the poineer in developing a group intelligence test in Bengali Subsequently, we have the tests developed by Sohan Lal, Jalota, and Mohsin in Hindi and Desai in Gujarati. Utilizing some existing western tests like Alexander Passalong, Kohs Block Design and a few others, Bhatia (1955) standardised, for the first time in India, a battery of performance tests for school-going children. By the forties, test construction had spread rapidly all over India Menzel (1956), himself a missionary, published the first book on test and measurement in India which is still widely used by students of psychology and education as their guide towards new types of tests.

Intelligence testing remained for long the most popular pursuit. Harper (1960) observed that in 1956, 40 per cent of the test development work in India related to intelligence In *The First Mental Measurement Handbook for India* (Long and Mehta, 1966) brought out by the National Council of Educational Research and Training, of the 326 tests on which abstracts and information had been provided, 100 were intelligence, 96 achievement, 60 aptitude, 45 personality, 15 interest and 10 were classified as "miscellaneous".

The figures of the number of tests developed in India are by no means comprehensive or reliable, nor are those reported in more recent publications. They are noted because they provide a rough index of the "fashion" in psychological testing in the educational context

The latest source is the *Classified List of Tests* (Jain, 1990-91) published in India and available in the National Library of Educational and Psychological Tests of the NCERT. The list provides the following figures (Table 1).

Except for greater proliferation of personality tests, the general trend seems to have continued since what was reported by Long and Mehta some 25 years ago.

TABLE 1
Tests Published in India and Available with NCERT

Intelligence	93
Aptitude	15
Achievement	25
Interest	19
Personality	167
(Others including Attitude = 54, Career and Guidance =3, Miscellaneous like Organizational Climate, Parental Perception and Change Processes = 81)	

The analysis of the tests developed in course of doctoral research in education and psychology as provided in the first and the third *Survey of Research in Education* (Buch, 1974, 1987) reveals a somewhat different pricture Taken together, developing tests of intelligence (verbal, non-verbal, performance, group, individual, and social intelligence), aptitudes (general and special areas) and creativity have been the most popular psychological tool construction exercise for doctoral work (Table 2). Unlike what is believed popularly in psychological circle, personality test construction does not seem to be as popular for doctoral research as tools of cognitive abilities. Measures of interest and achievement have not attracted much attention.

TABLE 2
Total Number of Tests Reported Since 1950 in the First and the Third Survey of Research in Education

		First Survey (1974)			Third Survey (1989)
Category		Ph D. Studies	Institutional Studies	Total	Total
I.	Intelligence	30 (48%)	8 (42%)	38 (46%)	100 (53%)
II	Aptitude	13 (21%)	4 (21%)	17 (21%)	39 (21%)
III	Personality	8 (13%)	4 (21%)	12 (15%)	29 (16%)
IV	Interest	6 (9%)	3 (16%)	9 (11%)	13 (7%)
V.	Others	6 (9%)	..	6 (7%)	6 (3%)

Regarding the situation in intelligence testing in India, Leslie Barnett's (1955) remark made more than three-and-a-half decades ago is still pertinent. He was struck by the general British orientation and the prevalence of statistical and cognitive traditions of Spearman and Thomson, and preoccupation with tests of 'g'. While there was much evidence of what may be called "adaptation mania", there was practically no diagnostic work. Although the situation since has somewhat altered, there persists a strong preoccupation with adapting all varieties of foreign tests, British or American. In this respect, Indian scholars showed an extreme amount of uncritical dependence because quite frequently the so-called adaptations were no more than imperfect translations of some western tests. Rarely was the exercise of back translation attempted, and even more rarely was the appropriateness of items for the changed socio-cultural context examined. Even when the tests were thus adapted, there was no concerted effort towards their development and validation. As Shib Mitra (1968, p.125) has remarked, in spite of many adaptations of the Binet-Simon test in India, "we do not have even a good first version of the adaptation of these tests, except in Marathi, Kannada and Gujarati "

As for personality testing, Bernreuter and Bell inventories have received more attention than they may be held to deserve; and even today scholars in some universities are engaged in either making their adaptations in various regional languages or using them as models for developing new adjustment inventories in Hindi and other regional languages. Regrettably, after these tests have been rendered in Indian languages, there is no adequate follow-up for determining reliability, validity, clustering of items, and development of norms for diverse samples.

Apart from intelligence and personality tests, there has not been the same amount of concern for developing interest and achievement tests. What is more striking is that, by and large, the sample on which these measures have been developed and used are mainly school and college students mostly from urban areas. Such a bias renders these measures entirely inapplicable to the three-fourths of the Indian population which happens to be rural.

Almost everyone who has commented upon the use of psychological measures in India has remarked about its being heavily dependent on the West (Parameswaran, 1972). Shanmugam (1972 p.302) asserts that "There is often an uncritical acceptance of technique used in the West. Just translating a questionnaire in the language of the country does not by itself prove its validity or reliability... What is strange is that there is no discussion of rationale behind choosing instruments. " He concludes that "when we look for significant contribution from Indian psychologists, we are rather disappointed, since most of the studies reported are based on western model" (pp. 301-302). Mukherjee (1980, p. 8) concludes that 'about 90 per cent of the Indian test construction literature is replete with instances of 'psychometric borrowings" from the West." It is, therefore, not surprising that the mechanical adaptation of western techniques has led to a proliferation of psychological instruments that are often meaningless and irrelevant in our cultural context.

Not only is there uncritical acceptance of techniques used in the West, frequently it has been taken for granted that merely translating a test into a language of the country makes it a standardised tool. Further, most of these tests and inventories which are popular in the West have their appropriate western theoretical background Such a theory-base is lacking in Indian studies which seem to "stand aloof without any direction and goal" For example, the Allport Vernon-Lindzey Value Scale is based on Spranger's conceptualization. The locus of control test which is fast gaining in popularity in this country has its roots in Rotter's social learning theory. Eysenck has developed his personality tests within the framework of his own theory of personality dimensions. The F-Scale for authoritarianism was developed within a particular socio-political context, and it is seldom realised that many of its items were constructed after a sizeable number of case studies which also formed the basis of an initial model for studying the relation between personality and prejudice. Indian versions of these scales represent what has been called "mechanical adaptation of American technique" (Nandy, 1976).

What is strange is that there is no adequate discussion of the rationale behind choosing instruments. At best the Indian approaches to psychological tests may be labelled as'electic' at the most, indiscriminate and atheoretical. The entire situation can be summed up in the words of Diaz-Guerrero (1977) who, while referring to cross-cultural psychology, remarked that it has up to now promoted a great deal of application of the instruments developed in the

First World. It has done very little to stimulate the development of local instruments that will at least measure psychological characterstics in the Third World and has been completely blind regarding the development of measures sensitive to idiosyncratic cultural and personality dynamics.

Why the Indian Situation is Far from Satisfactory ?

One point that inevitably strikes every reviewer of the Indian psychological scene, especially in psychological measurement (Mitra, 1972; Mukherjee, 1980, Sinha, 1986), is that though psychological testing started in the country almost contemporaneously with that in the West, the progress has not been as healthy as it should have been (Kulkarni and Puhan, 1988). We do not by any means lack leading statisticians and psychometricians in the country who have made outstanding contributions that are widely used by psychometricians from the western world. Something somewhere has gone wrong so that we have not addressed ourselves to the salient issues and have ignored the socio-cultural reality of the country. We would not go into this question at great length but discuss very briefly some of the crucial issues which have not been addressed to satisfactorily by psychologists in India thereby hamstringing the progress in the area of psychological measurement. The historical account briefly outlined earlier provides certain clues to the problem. We shall start with issues that have cropped up more contemporaneously

1. *Heavy Dependence on the West.* Reviewing the test construction situation at the doctoral level research, Shib Mitra and Kuldip Kumar (1974) and later on Kuldip Kumar and Shib Mitra (1979, p. 236), have made the following observations: "Most of the studies are adaptations of foreign instruments of measurement like Binet-Simon, WISC, WAIS, NIP, DAI, Goodenough's Draw-a-man Test, Bell's Adjustment Inventory, Kuder Preference Record-personnel, Strong Vocational Interest Bank, Maslow's Security-Insecurity Test, and Maudsley Personality Inventory (p. 236)". The observation is equally applicable to psychological testing in general in this country which has often been characterized as "adaptation mania" and condemned by Mukherjeo (1980, p. 8) as 'indiscriminate' psychometric borrowings from the West. Large scale adaptation of western instruments (it is so even of many claims made about "original" test construction) is indicative of our heavy dependence on the West for not only the technology/methods of testing, but also for ideas and concepts and even the nature of materials used in constructing the tests. In fact, many so-called adaptations are at best translations (and often poor translations at that) in Hindi or one of the regional languages. I have examined many tests widely used in this country which are supposed to be adaptations. Scrutiny has shown that these frequently constituted mere translations or dropping of a few items here and there considered culturally inappropriate (Sinha, 1983 a, 1983 b). Kulkarni and Puhan (1988, p. 41) corraborate the observation: "In fact, one would hardly find a test that has not been borrowed directly or indirectly from western sources."

There is nothing wrong in adaptation of a western test provided the necessary steps of test development are rigorously gone through. It is also necessary to consider at the end whether the adapted test on a population very different from the one on which it was originally developed measures the same thing as the original test. This has very seldom been examined. On the other hand, it is more or less taken for granted that the two measure the same thing. This assumption is unwarranted. In cross-cultural research, where the problem involved is of vital improtance, before a *borrowed* or even adapted test is applied on the socio-culturally different samples, its metric equivalence has to be ensured. Puhan (1982) has dealt at length with the question of psychometric invariance of measuring tools. Put very briefly it involves determining the "meaning invariance" of the test, i.e. whether or not it is actually "perceived" similarly by testees belonging to different developmental, cultural and other kinds of groups In cross-cultural research we compare the factor structures of the test scores on different cultural and national samples before concluding that the instrument in question measures the same constructs in the two or more samples. Puhan (1982), it is to be noted, demonstrates that the factor structure of tests like Raven's Progressive Matrices, Wechsler Adult Intelligence Scale tests which are often considered culture-fair, if not culture-free, does not remain the same over different age-groups and different cultural groups. The point made out by Puhan (1982) highlights the dangers of adaptation.

Further, when a foreign test is adapted by dropping a few items, whether due to their being culturally not appropriate or by item analysis (i.e., by eliminating items that do not discriminate between high and low scores on the test itself), it is generally felt that the procedure automatically ensures its validity This shortcoming characterizes most of our psychological tests. As Kulkarni and Puhan (1988, p 42) rightly point out, "this belief is psychometrically indefensible."

2. *Casual Concern for Validation*. This takes us to two related questions : the question of validity, and the construct underlying a test that has been developed or adapted. Kulkarni and Puhan (1988, pp. 67-68) point out that in the development of tools, psychologists in India have either *avoided* the issue of validity of the test, or "borrowing" validity from the original foreign version, or claiming face validity through experts' agreement, or merely establishing high internal consistency reliability on the authority of Guilford's intrinsic validity concept. Some studies have mentioned construct validity. But very few studies have really grappled with the problem of validity. In fact, in many excellent tests for which very high reliabilities have been reported one either finds validity ignored or it is often stated in the manual or the research paper without giving any details that the test has good validity. (It is to be noted that most test manuals lack adequate description of the construct, sample, and generalizability: reliability and validity). It is not enough to report the validity of a test (or even its reliability). Understanding its nature and conditions under which it was calculated is important. What is more vital is the question whether the instrument developed is relevant to the problem situation. To emphasize the point, Kulkarni and Puhan (1988) refer to the studies on MMPI in the USA. As we all know, the test was constructed by following all the rules of conventional psychometry. The researchers followed an empirical approach in its construction and it is one of the most researched tools over many decades. But this does not mean that it is highly reliable for all target groups or for all different scales Reliabilities for its different scales are much below 50 in many clinical situations Yet the instrument is extremely useful as the Rorschach and some projective measures whose reliabilities are proverbially low. As it has been pointed out, "the important thing is to consider it as one source of information of input data for decisions along with other sources, and that too, for specific decisions and not for labelling people as neurotic or psychotic."

The point made is not only applicable to tests where personality dimensions are included but also to those pertaining to cognitive spheres like intelligence and abilities. One is struck by the concern for reliability which sometimes verges on "obsession" and almost complete absence of concern for validity Confusion about validity among Indian scholars is further compounded by the large array of terms used in western literature implying different types of validities with a high degree of rational and irrational overlap. For example, as Kulkarni and Puhan (1988, p 68) point out, face validity is often used as construct validity and substantive validity is almost always misinterpreted as construct validity. The APA recommendations about the definition of the terms is not always strictly followed. It appears that Indian psychologists use the many validities (cf Messick, 1988) as and when it suits them. Many reviewers (Mukherjee, 1980; Sinha, 1983a) have pointed out this weakness of psychological test development in the country

3. *Lack of Conceptual Clarity.* Heavy dependence on the West in the field of psychological testing has resulted in almost a total lack of concern for specifying in clear terms the construct underlying the test and the theoretical framework of the test developed. Even a casual perusal of the many test manuals and test development literature in India reveals absence of discussion or very inadequate elaboration of the concept or concepts involved in the test. Mukherjee (1980, pp. 8-12) has specifically emphasized this shortcoming. He refers to the defective operationalisation of the concepts and consequently the utilization of wrong measurement procedures. "Since the concepts and operations involved in defining the concepts were seldom made explicit, most reports of psychological investigations have so far been lacking conceptual clarity As a result many hypotheses tested so far have been written in nebulous form and it is no surprise that they remained untestable" (Mukherjee, 1988, p. 8). Kulkarni and Kuldip Kumar (1987) have pointed to another common confusion among Indian test researchers. Many of them tend not to distinguish their interpretation of test result from the theoretical construct. The two should be distinguished clearly.

Explicit statement of a concept and its operational definition bring to light measurement problems involved and also helps in developing its indicators. These are very useful in developing items and appropriate measurment procedure as well as criteria for the validation of the test. Inappropriate operationalisation of a concept leads to defective measurement. There are many patent examples of this None probably is more striking than the case of mechanical adaptation of F-Scale (authoritarianism scale). Apart from the inherent structural weaknesses of the scale which Indian adapters have not bothered about, the question of the conceptual relevance has been ignored. Moreover, in its original form, authoritarianism has been conceptualised in multi-dimensional terms (ethnocentrism, fascistic political belief, intolerance of ambiguity in various forms, anti-democratic attitudes, personal rigidity and so on). These clearly indicate that whatever is measured by the F-Scale is a *syndrome* and not a single personality trait. Unfortunately, not taking due care in defining the concept and examining the particular socio-cultural and political context in which the F-Scale had been developed, the investigators in our country have tended to regard the concept of authoritarianism as a single unidimensional characterstic rather than a complex syndrome. Unless the researchers realise how difficult it is to transfer concepts and tools wholesale from one cultural setting to another, a large amout of effort directed towards adaptation is likely to go futile.

Culturally Appropriate Measure

We have repeatedly emphasized the need for cultural appropriateness of the test, whether freshly developed or adapted (Sinha, 1983a), and have suggested strategies for the purpose. Putting a test in non-verbal form—either performance or using pictorial materials—does not make it culturally appropriate. There is plenty of evidence from cross-cultural studies on perception and cognition that points to the difficulties encountered by illiterate, preliterate and unsophisticated population in perceiving and interpreting pictorial materials There are difficulties in making a test culturally fair, what to speak of "culture-free " Apart from translation, back-translation and subjecting the test thoroughly to standardization procedure, we have emphasized keeping "the paradigm and rationale of the test constant but utilizing indigenous activities and materials for desingning the measure (Sinha, 1989, p.31). Though it is regarded as a useful strategy, "it does not solve the problem of culture-bound constructs because the way one measures and the operations involved determine their nature; when you change the procedure for measuring a construct, the construct gets altered despite the old nomenclature" (Sinha, 1989, p.31).

The difficulty is a formidable one in test adaptation. But the researcher has to be fully conscious of it, rather than ignoring it by pushing it under the carpet as it is frequently done. Moreover, it is probably one of the reasons why many reviewers have emphasized "indigenisation" (Sinha, 1986) and "the real need for indigenous thinking in the area of psychological concepts and their measurement based on the social, economic, cultural and political conditions of the country (Mukherjee, 1980, p.12)

Sample Characterstics. One of the commonest defects of Indian work on test development has been inadequacies in sampling and incomplete description of sample characterstics. The sample on which tests are developed, standardised or adapted, and data collected are frequently small, unrepresentative, and incidental. Sampling is more frequently incidental or purposive and not stratified random. It is frequently a *sample of convenience* rather than one of probability. "Captive" samples—usually middle class, school and college students from urban areas, or those who readily volunteer to participate in the testing programme and a distinct urban and male bias—that are frequently utilized vitiate the representative character, and limits the generalizability of the findings

Apart from it, in a very large number of instances, sample description is either absent or inadequate. Quite often, the investigator does not even bother to state explicitly the details of the population studied and the manner in which the subjects were sampled Without such information, any inference regarding the applicability of the test in question is likely to be made on tenuous grounds.

Moreover, there are special dangers in applying uncritically the measures developed on urban samples to rural population. Apart from the problem of suitability or appropriateness of the test materials, there is also the question of test-sophistication and test-taking attitude. These are important considerations but have not been adequately attended to by Indian investigators. "Unless representativeness of the sample is ensured and newer techniques more appropriate for rural population are devised, it would be bad science to draw speculative conclusions about "Indian" intelligence, aptitude, personality, attitudinal and motivational characterstics like prevalence of apathy, fatalism, cooperation or non-cooperation, achievement motivation, alienation and the like. Moreover, if these concepts have not been appropriately operationalized taking into account the Indian situation, their use may itself be a violation" (Sinha, 1983, p 23).

Tool-orientation rather than Problem-orientation. One of the reasons for psychological testing in the country not having a healthy progress relates to its origin, and is an aspect of the general psychological scenario in the country. In the West, psychological assessment originated and grew out of social necessity It received the impetus for its origin in the World Wars I and II when major testing programmes were initiated for recruiting personnel and their placement. The practical challenge provided an excellent opportunity to the researchers for verifying their theories, even hunches and pet ideas, by solving actual problems of their respective countries. People like Binet and others struggled hard to help the educational system and decision-making. They worked closely with educationalists, doctors, military personnel in developing ingeneous tools providing data that would help various decision-making in practical field.

In contrast, as Kulkarni and Puhan (1988, p 63) have rightly observed, Indian research work has been tool-oriented rather than problem-oriented, having very little to do with problems of human beings for whom the tools were supposedly developed. Psychological instruments were constructed for their own sake, or at best to obtain a degree or have a point added to one's curriculum vitae. It is, therefore, not surprising that we have succumbed to "adaptation mania" quite readily. That the tool could have practical implications in decision-making in educational and other spheres came in only later, and remained a peripheral consideration. As a consequence, scholars tended to get carried away by purely "metric" aspects, did a lot of "acturial" work, and statistical jugling, rather than directly confronted with helping to solve day-to-day problems. It is also a consequence of the trend that there has not been much collective and sustained work in this direction, rarely worthwhile follow-up to determine how the test was operationg, and how it could be improved. There are, of course, some exceptions. But the pattern has been to develop a *new* test rather than work and improve on the already existing ones. Science is a "cumulative endeavour"— a feature that psychological testing research in India sadly lacks.

Rigidity in Psychometric Model. In recent years, the concept of trait has rightly been under fire. Man is not a bundle of traits which are static. Even the definition of personlity propounded by Allport over half a century ago talked of it as a "dynamic organization." As far as our *philosophy* of testing goes, it is implicit that personality is nothing but a collection of traits and characteristics which are stable. As Nunnally (1970) has observed, it is these traits, and not the whole personality, which are considered to be measureable dimensions of behaviour through their dichotomous categories of continuous finer gradations. "Edwards and Abbott (1973) reiterate the same point: "We do not measure personality (whole person), we measure traits which hopefully, provide information about the relevant dimensions of personality." This model is generally followed by our psychometricians who seem to subscribe at least implicitly to the "square pegs and round holes" static model in their educational decisions. This static trait approach is giving way to developing psychological instruments which are more appropriate to the dynamic model of personality. It may be noted that Cronbach's recent work on generalizability theory (Cronbach et al., 1972) attempts to overcome the unnecessary rigidities of the old psychometirc models in human assessment.

Like the pre-Einsteinian physics, researchers are still struggling for some kind of absolute objectivity so far as personality and especially the traits are concerned. Two points in this context are worth noting. Firstly, this new line of thinking reflected is the fact that more and more people are coming over to the new assessment approach which includes interview, observation, and so on. Former approach had limited psychological assessment to mental testing and a static view of individual traits.

Secondly, it is being increasingly realized that the meaning of a score on a test can be derived only when viewed in its dynamic relationship with the environment As Wechsler (1974) has ovserved, even a construct like intellignece has gone through a sea change. We have come a long way from Spearman's 'g' We now talk of *fluid* and *crystalized* intelligence, and have come to a contextualist view and regard it as embedded in the socio-cultural and ecological context (Sternberg, 1984). One has to have a concept that is rooted in the eco-cultural setting and a totally different and culturally appropriate strategy for its measurement rather than the tests we are familiar with.

Large-scale Testing Programme The last point we shall discuss is the problem of nation-wide large-scale testing programme. In our country, we have just stepped into the arena of large-scale testing programmes to help decision-making for selection of personnel at various levels of administration and different occupations We have "testing" for entrance to IITs, IIMs, medical schools, civil service and other services conducted by UPSC, and UGC test for selection of junior research fellows. The National Commission on Teachers in Higher Education in its report (Government of India, 1985) has recommended holding all-India recruitment test for the selection of teachers to ensure inter-university comparability (p. 79). It stipulates that "passing of one of the *national tests* at least in grade B+ on a seven-point scale" be laid down as the minimum qualification of teachers. National testing programme is already on the anvil and would be implemented before long

Many of these programmes have utilized psychological tests and testing for research "aptitude". Even if they have not actually used psychological tests, they have adopted the format of *objective* tests Let us not go into the merits or otherwise of the existent programmes. We would, however, like to observe that just adopting the multiple-choice items or the usual forms of psychological test items does not by any means make the testing objective. Apart from reliability, validity and item analysis, *appropriateness* of the test items for various types of population to be tested is essential. We have also to constantly check as to what the tests are *actually* assessing rather than the content with what we think they assess With so much of diversity rampant, any programme of national testing presents formidable problems which the researcher has to face and solve. It is not surprising that there is opposition to these programmes especially in some regions. It is now proved that mere talking of psychological tests requires a degree of sophistication which is not present in all people. If that varies with certain levels and kinds of education, urbanisation, socio-economic class, and so on, the fear that such testing would be "discriminatory" and help to perpetuate the *status quo* and lasting inequalities is not unjustified. If these tests discriminate against persons belonging to the socially disadvantaged, scheduled castes, backward castes, tribals and minority groups, the entire programme would be futile and unjustified. As Pandey (1976) has argued, "objective test results should be to help rather than discriminate and create a durable psychological traumatic experience in the subjects.... The IQ test should not serve as an instrument of oppression against the poor." Tests are no doubt meant to discriminate, but on a criterion that is sound, fair and have a socially accepted purpose. Researchers on psychological tests have to confront this problem and help in finding solutions.

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Need for the Statement of Hypotheses in Scientific Research

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John W. Best and James V. Kahn define "Research as the systematic and objective analysis and recording of controlled observations that may lead to the development of generalizations, principles or theories resulting in prediction and possibly ultimate control of events". The above definition states that Research is a systematic and scientific search for pertinent information on a specific problem. It is a systematized effort to gain new knowledge through objective approach. It is also a systematic approach concerning a generalization and the formulation of a theory. It is an art of scientific investigation. This systematic approach consists of a problem, formulating a hypothesis, collecting and analysing the data, arriving at certain conculsions with regard to the problem taken up earlier for study.

In all kinds of research, scientific method must be employed It is because research is the pursuit to achieve a true and systematic interrelation of facts based on logical considerations. "The scientific method", according to Corlos L. Lastrucci, "encourages a rigorous, impersonal mode of procedure directed by the demands of logic and objective procedure".

According to Fred N. Kerlinger, Scientific Research is systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomena". Thus scientific research is based on empirical evidence, utilization of relevent concepts, objective considerations, value neutrality, probablistic predictions, verifiability through testing and formulation of theories.

From the above definiton, it is clear that, in scientific research, there exists a certain statement of relationships between concepts. Further, the relationships between variables can be measurable and also they specify how the variables are interrelated. Isolated facts of observations have no meaning, unless such relationships between facts are assembled, ordered and seen in a theoretical framework for their meaning. Such a framework constitutes a theory. The basic aim of scientific research is to explain natural phenomena. The other sub-aims are explanation, understanding, prediction and control. Such explanations of natural phenomena are called theories

As Fred N. Kerlinger defines, "A theory is a set of intellectual constructs (concepts). definitions and propositions that present a systematic view of phenomena by specifying relations among variables with a purpose of explaining and predicting the phenomena". A theory states a logical relationship between facts. It is a deductively connected set or a system of related conceptions in agreement with known properties or behaviours and stated so, as to guide in the search for properties or behaviours hitherto unknown. The various facts in a theory may be logically analysed and they can be deduced. The formulation of the deduction constitutes a hypothesis. A hypothesis, if verified, becomes a part of a future theoretical construction. In practice, a theory is an elaborate hypothesis which deals with more types of facts than does a simple hypothesis. The hypotheses, on the other hand, are those deduced true propositions from theory which can be put to test to determine their validity. They may prove to be correct or incorrect, but in any event it leads to an empirical testing. In simple terms, a hypothesis is a tentative or working proposition, suggested as a solution to a problem whereas a theory is the final hypothesis which is defensibly supported by all the evidence. Thus theories and hypotheses represent a form of simplification in dealing with detailed items of information.

Definition, Characteristics and Statement of Hypothesis

One the selection and definition of a research problem with objectives has been accomplished, the derivation of hypothesis is the most important step in the research process.

1. Definition of Hypothesis

As Fred N Kerlinger defines, "A hypothesis is a conjectural statement, a tentative proposition, about the relation between two or more phenomena or variables". Thus it states: "If such and such occurs, then so and so results".

The above definition explains that hypotheses are statements about the nature of relations between variables and also those relations can be measurable and testable A statement that lacks either or both these characteristics is no hypothesis in the scientific sense of the term.

Carter V Good defines· "A hypothesis is an informed or shrewd guess or inference, with a reasonable chance of being right, formulated and tentatively adopted to explain observed facts or conditions and to guide in further investigation, in other words to serve as the investigator's "eyes" in seeking answers to questions. The scientist's hypothesis parallels the common man's personal opinion or hunch".

The above definition states that the investigator, according to the nature of his research problem and the dimension of its study, draws certain inferences, basing on his past experiences, observations, information gained from others, intelligence, common sense and good reasoning ability These inferences have chances of right conclusions and are also formed in such a way that they can be tested in the light of the findings of the subsequent research for their acceptance or rejection in the building of a cohesive theory Such inferences are called hypotheses. Further, a cohesive theory can also be deduced in the form of hypotheses.

Let us illustrate an example — An investigator wants to know the effect of the socio-economic status on the academic achievement of school children. He formulates a hypothesis that riches provide the basic needs. Therefore they can concentrate more on studies On the contrary, with the lack of money to buy basic needs, the children of poor families develop more worries and they cannot concentrate on studies. With this assumption, the investigator prepares a tool, collects data, analyses the data and finds the results. He, then, tests his earlier hypothesis in the light of his results. If his earlier assumption is positive, he postulates a theory that the socio-economic status has an effect on the academic achievement of school children. If the result is negative, the effect is also negative.

In the same way, deductions can also be made from this theory in the form of hypotheses. 'A' is the son of a doctor. He scored 80 per cent marks and exhibited 10 per cent worry, whereas 'B' is the son of a labourer who scored 36 per cent marks and exhibited 75 per cent worry. We can deduce the hypothesis that the difference in the academic achievement is on account of the difference in the socio-economic status of the respective families.

2 *Characteristics of Usable Hypothesis*

(a) Hypothesis must be conceptually clear, simple and limited in scope: The concepts should be clearly and operationally defined and these definitions must gain general acceptance and communicability.

Hypotheses should be stated in the simplest possible terms. Very often they are expressed in such general terms as "Intelligence", "Class", "Personality", etc. which cannot be defined or testable easily because of their magnitude. It is better to avoid such terms in the formulation of hypotheses.

Hypotheses of global significance are not usable, as they are not specific or simple for testing and drawing conclusions and also they require more money, time and efforts on the part of investigators. It is desirable to formulate hypotheses that are simple to test and are of high significance. Yet, there is a possibility of drawing a broad research hypothesis and deriving a number of operational hypotheses from it.

(b) Hypothesis should be testable: Hypotheses must be formulated in such a way that they can be testable in the light of the results of the collected and analysed data. Without testing the hypotheses, conclusions cannot be drawn. For example, the NCC programme promotes an alround adjustment among school children. Here, "alround adjustment" is neither measurable nor definable clearly by isolating other factors that might contribute to the adjustment of children.

(c) Hypothesis should be specific and should state explicitly the reasonable relationship between variables: All operations and predictions indicated by hypotheses should be spelled out. By making all the concepts and operations explicit is meant not only conceptual clarity, but a description of any index to be used. Specificity increases the validity of the results and saves the expenditure of effort.

Let us consider two hypotheses: (1) Physical Education Training for School Children Promotes Greater Moral Growth and (2) Attitude of Class X Boys and Girls of APR School towards Mathematics.

The first hypothesis is not usable, because the term "greater moral growth" cannot be measurable. Further, there is no reasonability of relationship between the variables, i.e. "physical education training" and "greater moral growth".

In the second hypothesis, 'attitude' is a variable, which can be measured by the application of Thurstone's and Likert's Attitude scales. In this case, there is a measurable relationship between the attitude of boys and girls towards mathematics.

(d) Hypothesis should be related to available techniques. Theory and method must go together. There are some impossible hypotheses which may make their formulation worthwhile. If the problem is significant enough as a possible frame of reference, it may be useful and can be tested at the time.

The socio-economic hypothesis of Karl Marx was not proved by his data. The necessary techniques were not available either then or now. Yet, the Marxian frameworks are an important source of more precise, smaller, verifiable propositions.

Sometimes, posing an impossible question may stimulate the growth of techniques.

(e) Hypothesis should be related to a body of theory: Any research should support any existing theory. A science can be cumulative only by building on an existing body of fact and theory. It cannot develop, if each study is an isolated survey. A hypothesis must not only be carefully stated but it should possess theoretical relevence, then only a genuine contribution to knowledge is more likely to result.

3. *Statement of Hypothesis*

A research hypothesis can take either declarative form, null form, or question form. When the investigator makes a positive statement about the outcome of the study, the hypothesis takes the declarative form. For example, there is a signifcant relationship between the physical education training of children and higher scoring of marks in the examinations. In this case the investigator makes a prediction based on his theoretical formulations.

In the null form, the investigator makes a statement that there exists no relationship. For example, there is no relationship between the physical education training of children and higher scoring of marks in the examinations. This form is known as "statistical" or " testing" hypothesis. It is important in the application of statistical analysis of the collected data.

In the question form, the statement asks a question as to what the outcome will be, instead of stating what outcome is expected. For example, is there any significant relationship between the physical education training of children and the higher scoring of marks in the examinations?

Sources and Required Equipment for Formulating Hypothesis

There are four sources from which a hypothesis arises.They are general culture, process of scientism, anologies, and idiosyncratic experience.

1 *General Culture as a Source of Hypothesis*

The development of science in the Western society is not accidental but it is a function of the culture itself. The hypotheses which have been put forth and tested have been related to a particular cultural complex.

The American attitude emphsises individual happiness, mobility and competition. The whole disciplines of study in America are directed towards those cultural ethos For example, the central motive of the subject matter of economics is based on individual happiness. In the same way the psychologists use the term "adjustment" for hormonious life, meaning happiness

2. *Process of Scientism as a Source of Hypothesis*

The process of scientism affects the hypotheses which will be developed by the scientist First of all the student learns from his teacher about promising areas, adequate methods to be applied and about superior scholars in that discipline.

Later in his life, the scientist is affected by a similar process like discussions with his colleagues, publications and approvals, arriving at consensus as to which areas and problems are thought to be important. Through this constant interaction in the area, "fashionable" modes of thought, terminology, concepts and problems develop. These, in turn, operate to suggest further hypotheses

3. *Anologies as a Source of Hypothesis*

Causal observations in nature or in the framework of another science may be a good source of hypotheses. The hypotheses that resulted in the development of human ecology were an application of established theory in the field of plant and animal ecology. Anology may be very suggestive but care must be taken or otherwise it is dangerous.

4 *Idiosyncratic Experience as a Source of Hypothesis*

Perception plays an important role in the scientific discoveries, because the right individual happened to make the right observation because of his particular life history. For example, Darwin's "Origin of Species", Everyone could have seen it, but Darwin was the right man at the right time.

In the same way, Gandhiji could see that violence produced more violence and it was non-violence that could control violence.

5 *Required Equipment for Formulating Hypothesis*

There are three primary requirements for formulating hypotheses. They are:

(a) The investigator should be equipped with a thorough knowledge of a clear theoretical framework.

(b) He should possess a good ability to utilize that theoretical framework logically.

(c) He should aquaint himself with available research techniques so as to be able to phrase the hypothesis properly.

Functions of Hypothesis in Scientific Research

1 Hypothesis is a powerful tool in the research process to achieve dependable knowledge. It defines

the scope of an area of research and provides explanations for facts and phenomena which can be tested and validated If the explanations are valid, generalisations can be drawn. From these generalisations observations can be made. Thus it helps the investigator to relate theory to observation and observation to theory.

2 It enables the investigator to locate and identify the variables involved in the study. It establishes a logical order of relationships by explaining the conditions of events that have not yet been confirmed by facts. It helps the investigator to relate known facts logically to unknown conditions

3. Hypothesis directs the investigation. The relations expressed in the hypothesis tell the investigator what to do It is a generalised relational statement, which enables him to deduce specific empirical manifestations implied by the problems and hypotheses. Hypotheses contribute as explanations, stimuli to research, sources of methodology, criteria for evaluation, experimental and other techniques and organising principles. They represent specific objectives and direct the investigator to collect the type of data required to test the proposition. They provide a basis for selecting the sample and research procedures to be used in the study. They also decide the statistical techniques needed in the analysis of data and the relationships between the variables to be tested. They limit the area of investigation, sensitizing the worker to pertinent data and relationships. They provide a unifying concept.

4. Hypothesis provides the bases for reporting the conclusions of the study. The investigator can test each hypothesis separately and state the conclusions that are relevant to each On the basis of these conclusions the investigator prepares his research report.

Testing Hypothesis

Hypotheses are subjected to empirical testing. Some hypotheses are simple and they can be tested directly. For example, 'drinking alcohol causes intoxication'; 'sugar is sweet', etc

Some hypotheses are complex and they cannot be tested directly. They have to be tested in terms of their deduced consequences. For example, "poverty leads to immorality". In this case, the investigator has to deduce the consequences emanating from the situation of poverty. For example, "great pressure from wife's ill-health leads to corruption, theft, etc In this way the investigator does not test the hypothesis itself, but he tests the deduced consequences of the hypothesis.

In order to test the hypothesis in terms of deduced consequences, it is necessary to collect evidence by selecting the appropriate tools of data collection and analysis. Then, the investigator has to interpret the results in the light of the deduced consequences of the hypothesis.

Whether Formulation of Hypothesis is Necessary for all Kinds of Research

As Cohen says, " There is .. no genuine progress in scientific insight through the Baconian method of accumulating empirical facts without hypotheses or anticipation of nature. Without some guiding idea we do not know what facts to gather. .. we cannot determine what is relevent and what is irrelevent".

The above statement reveals the importance of hypotheses in a scientific enquiry. Generalisation cannot be arrived at, without the formulation of hypotheses. The investigator loses his direction in collecting relevent data. The experimental research is aimed to make predictions about some outcome The role of hypothesis is considered to be of utmost importance If hypotheses are not constructed, the investigator may waste much time and energy in gathering extensive empirical data and then finds that he cannot state facts clearly and detect relevent relationships between the variables.

As Poincare pointed out, "It is often said that experiments should be made without preconceived ideas. That is impossible. Not only would it make every experiment fruitless, but even if we wished to do so, it could not be done"

Historical or descriptive research is aimed at studying the history of a city, region, ruler, or the happening of an event which does not have a basis for making a prediction of the results Therefore, a hypothesis may not be required in such fact-finding studies. Hillway opined· "When fact-finding alone is the aim of the study, a hypothesis may not be required"

Most historical and descriptive studies involve not only fact-finding, but interpretation of facts to draw generalisations If the investigator wants to study about the results of a forthcoming parliamentary election, the facts or data he gathers will themselves prove, if he is able to draw generalizations from them.

Generally, a hypothesis is recommended for all major studies to explain observed facts, conditions, or behaviour and to serve as a guide in the research process.

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Book Reviews

Education in the Eighties

BRIAN SIMON AND WILLIAM TAYLOR (Eds.)

Basford Academic Educational Ltd., pp. 267, £ 4.95

THE book is a collection of educational essays written by well-known educators on the issues and problems of education during the 1980s. The newly emerging problems in education like that of admissions, work and leisure, race, equality, national identity, autonomy, accountability, evaluation and technology have been analysed. All these key issues have resulted from the radical changes in the social, economic and political aspirations of people.

The book is divided into twelve chapters In Chapter 1, the demographic fall-out on education has been discussed The relationship between education and social change as well as making education as an investment in future have been discussed Chapter 2 highlights the role of education on the development of society. It is contended that the general education of students must include the political, aesthetic and moral component

Chapter 3 dwells on the aspects of having proper coordination between various agencies connected with education, teaching training colleges and other specialised bodies to devise right policies of education in a diversified society. In Chapter 4, the author has emphasised equality of access and broad-based education.

In Chapter 5, the problems of national and regional identities in the national educational system have been critically analysed. The author maintains that the realities of internal cultural heterogeneity are too strong to be ignored. In the eighties, the diversity of cultural, equality of educational opportunities and nationalism pose central questions for educational policy-makers.

The author of Chapter 6 warns us about the dangers of the inadequacy of core curriculum as such model may strengthen the aspects of narrowly conceived accountability As an alternative, the idea of common curriculum based upon composite cultural aspects has been recommended by the author

Chapter 7 stresses the need of coherent pedagogy for common core curriculum along with individualization of education. The author advocates for a unified system with individual needs of students looked after by special arrangements. In Chapter 8, some recent developments in evaluation and accountability have been examined. A number of practical ways of giving parents legitimate information about the performance of the school have been suggested It is maintained that these methods can have the negative back-wash effect inherent in common systems of evaluation and accountability.

In Chapter 9, the author has tried to provide answers to value-laden problems through scientific approach to tackle them. Such problems generally arise due to expectations which at times are hard to fulfil. Chapter 10 discusses about the opportunities that the school can avail for imparting democratic values to students.

Chapter 11 discusses conflicts between autonomy and accountability in education, while Chapter 12 makes a case for maintaining and encouraging many alternative forms of educational provisions.

Chapter 13 decries the deschooling concept. It has been held that the school, far from being dead, is likely to become the centre for recurrent education and life-long education. In Chapter 14, the ways of using media facilities for educational purposes in the years ahead have been suggested.

A close scrutiny of the chapters reveals that the topics discussed in the book fall into three main groups, namely, social, economic and population aspects of education. These three aspects affect the educational decision-making process. A good discussion of various topical issues in education makes a book a valuable document. The book is useful for all concerned with the business of education as it provides an insight into current educational problems.

LALIT KISHORE
B.K. AGGARWAL

Higher Education in India: Issues and Perspectives

ATMA RAM

Mittal Publication, Delhi, 1990, pp. 112, Rs.115.00

THE book under review is one of those books on higher education which have highlighted some of the inherent maladies of higher education since its proliferation after independence The book contains twelve distinct chapters and five appendices. Three of the appendices relate to the guidelines issued by the University Grants Commission on (i) Code of Professional Ethics for University and College Teachers; (ii) Working Days in Universities and Colleges, (iii) Performance Appraisal Report-II (Self-appraisal)

The other two appendices relate to the Open University of England and the Impressions of American Higher Education. These two appendices are based upon the impressions of the author's personal visits to these countries on his study trips. Whether the subject is Ten Plus Two Plus Three system or Autonomous Colleges, Distance Education or Campus Scene and Education, the analysis is discussed in the light of the National Documents on the subject and the underlined treatment originating from these documents. According to the author, the entire system of higher education should be based on the principles of decentralisation, democratisation and dynamism, and at all stages, allow for openness diversity, mobility, integration, autonomy and quality control (p 15)

The prescription and approach for tackling issues related to development councils and staff colleges, is problem-solving and result-oriented, hence it is no wonder that staff colleges should add in their orientation courses the new emerging training needs for the non-conventional sector, viz guidance and counselling bureaus for careers, lectures/workshops on general knowledge' freedom fighters, makers of India, youth and drugs, national integration through education; population; adult literacy; computer awareness; case studies of sick as well as better institutions; innovations like autonomous colleges; restructuring of courses; pre-examination coaching classes for PMT, PET, JET, NDA, NDS, Probationary Officers, All India Central and State Services exams, and so on (p.22). Based upon documentation and facts, the author pin-points the malfunctioning of the university education system by highlighting the non-implementation of all innovative schemes He endorses the fact that schemes per se are not devoid of direction, form and perception but have lost their vigour and attention for reasons of lackadiasical attitude of those who were responsible to implement them. Is it the case in the education sector alone ?

The perspectives perceived by the author in tackling each subject/issue under his chapter scheme is, to a large extent, the dispensation of considered opinion of those who have examined these subjects/issues as subject-specialists or at least who have been at the helm of affairs to do the job It would have been better if these perspectives had been examined and extended from the imports of state policy; economics and sociology of higher education in the context of social vastly and as such has a larger stake. The position is all the more consequential so far as the higher education sector is concerned

Almamater decides the destiny and direction of the present-day youth who will be the nation-builders of tomorrow. Therefore concretisation of issues and their dispensation must draw attention and endeavour on the part of all of us.

This publication should be considered one milestone towards this goal.

V.P. GARG

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TO OUR CONTRIBUTORS

JIE invites articles/papers on the impact of educational research on classroom practices and policy decisions. Specific examples where this impact is apparent may be given.

GENERAL EDITOR

Tagorean Concept of Universal and Eternal Man

SITANSU RAY
Visva-Bharati University

TAGOREAN INTERPRETATION OF "AMI" : MAN'S SELF ESTEEM

THE word *Ami* is the Bengali synonym of Sanskrit *Aham*, German *Ich* and English *I*. Any corresponding synonym of any language for denoting and connoting the first person singular number form of personal pronoun may be thought of tanscending its day-to-day worldly usage that very *Ami* (I) is the principal instrument of epistemology, the main laboratory of existentialism and the boundless realm of phenomology. The human being is not a passive component of creation. He himself is (similarly, I myself am; and you yourself are) the nominative of all sorts of creativity in the arts, science and philosophy.

The poet-philosopher Rabindranath Tagore (1861-1941) wrote three poems entitled "Ami" in the last decade of his life. All the three poems reveal self-esteem of the human being. Let us discuss one by one.

The poem *Ami* [1] in the poetical work *Parishesh* (i.e., the ultimate ending, composed on 11 February 1931) is expressive of man's self-interpretation in existence. The gist of the poem is as follows:

The inner "I" within my self is the vital source of all my words, movements, music and all sorts of creativity. I am not the be-all and end-all of my own self. I am not bracketed by my birth and death since that inner "I" extends beyond my self both in time and space. That is why I know myself better when I recollect the memory of my beloved, when I identify myself with the heroes of history and with the mythologies I read. Very often that inner "I" is overshadowed by my present-day narrowness. But in reality the realm of my inner self tanscends my matter-of-fact living. My inner "I" is omnipresent in the past, present and future. "I" can move everywhere and everywhen. My apparent "I" perceives that inner "I".

The second poem entitled *Ami* [2] is to be found in the "Addenda" portion of the poetical work *Shesh Saptak* (i.e., the concluding octave, published in 1935). The central idea of the poem is the astonishment and delight of the poet's realization of existence. *Achhi achhi ei ye ami achhi*[3]. That means, how fine it is that I am existent along with the existence of the natural and social surroundings around me, and obviously in the midst of the vast extra-terrestrial world encircling us all But, above all, as a tree attains its celestial stage in its blooming season, so also I know myself better through beauty, love and music.

The third poem of the same title *Ami*[4] (written on 20 May 1936) is included in his poetical work *Shyamali*[5] (1936). This poem is one of the best poetical expositions of what may be called the phenomenology of human mind. Reversely speaking, the phenomenology of human mind finds its best integrated yet concise poetical manifestation in this poem *Ami*. Quite metaphorically, viz in the rhetorical expression of transferred epithet, Tagore says that it is but the encolouration of man's consciousness which tinges the emerald as green and a piece of ruby as red, it is man's visual perception which illumines the sky, and, rose is beautiful only because man perceives it as beautiful.

Some sort of philosophical theory may nullify emerald, ruby, lustre, rose, etc. and may negate even "you" and "I" But the supposed Infinite has always been endeavouring to manifest Himself in the finitude of man, and that very manifestation is called *Ami*, in the depth of which vital affirmations of light and shades, lines and colours create forms enlivened with feelings. By virtue of creative imagination man's self is all-encompassing.

Suppose, a total annihilation takes place by means of a violent cataclysm, natural or man-made. Suppose, there is no human civilization any more. Matter and energy will remain and evolve in some form or other, but there will be no feeling, no sense of beauty and no love.

If that stage comes, the Creator will have to start again one more age-long *Sadhana* (prayer) for the renewal of man, as it is man alone who will say –

"You are beautiful,
I love you."

The illuminating, dynamic and loving nature of man's self makes him greater than his creator.

In various prose-writings also this basic idea regarding man's self-esteem is Tagore's key tone. One such writing is the essay entitled *Amar Jagat*[6] (my world) in the book *Sanchay* (the accumulated wealth). Here, Tagore wants to establish the truth that the world is not the mere play of radioactivity, the world is after all mine.

SYNTHESIS OF ART AND SCIENCE IN HUMAN PERSONALITY

In course of the Hibbert lectures (delivered in Oxford in 1930) Tagore said –

> "even the impersonal aspect of truth dealt with by Science belongs to the human universe But man of Science tell us that truth, unlike beauty and goodness, is independent of our consciousness"[7]

With a mission to seek and establish the most ideal relationship between the unbounded cosmic force and human personality, Tagore referred to this age-old problem which is now somewhat dealt with by phenomenology, existentialism and philosophy of science. Tagore realized the problem and attempted to solve it by giving immense importance to human personality. Tagorean outlook must not be overlooked, nor should it be allowed to get lost in our modern academic pursuits. It is not that as a poet Tagore just eulogized human personality and undervalued science. He extracted the cream of the philosophy of science in the following language –

> "Science may truly be described as mysticism in the realm of material knowledge It helps us to go beyond appearances and reach the inner reality of things in principles which are abstractions; it emancipates our minds from the thraldom of the senses to the freedom of reason" [8]

Yet, Tagore realized that whether in scientific discoveries or in aesthetic creativity the only perspective is the ever-expansive human world, the over-all concern is ever-growing human knowledge and wisdom, and the total entity is nothing but human entity. Inquisitive scholars may go through the conversation between Tagore and Professor Albert Einstein (in the afternoon of 14 July 1930, at the Professor's residence at Kaputh)[9].

In his essay "What is Art" Tagore clarified the identities of science and art and their place in human personality with the analogy of food-value and taste-value of our diets. The food-value of a particular diet is in its component parts, while the taste-value is in its unity, which cannot be analysed. Matter is analysed in science. But, manner, flavour and taste may come under the law of rhetoric

> "But when they are indissolubly one, then they find their harmonies in our personality, which is an organic complex of matter and manner, thoughts and things, motives and actions "[10]

Tagore appreciated the intellectual triumphs of science, yet he understood that man must always be music-maker and dreamer of dreams. In his material quests, man must not loose his longing for rhetoric, love and art Actually science and art are not contradictory but complementary to each other in the realm of human beings. Let us notice another analogy –

> "Music is the most abstract of all arts, as mathematics is in the region of science . Mathematics is the logic of numbers and dimensions When taken out of its concrete associations and reduced to symbols, it reveals its grand structural majesty Yet there is not merely a logic but also a magic of mathematics which works at the world of appearance, producing harmony – the cadence of interrelationship "[11]

UNIVERSAL AND ETERNAL MAN. THE HIGHEST IDEAL OF EDUCATION

Humanity is composed of individuals, who by means of interrelationship, may form a solidarity of man's world. This thought also led Tagore to reach the ideal concept of universal and eternal man. The universal man surpasses the barriers of region and man the eternal transcends time. It is a continuous process and the process should start right from childhood. Tagore understood that that kind of education is right which develops the personality of the pupils in two-fold contexts. (1) in the context of nature gradually leading to the awareness of man's position in the midst of the vastness of the cosmic universe, and (2) in the context of humanity, creativity expandable to a newer world civilization

Regarding the relationship between the individual and the universe, man must realize that he is not merely man but he is man-in-the-universe He must comprehend the wholeness of his existence and his place in the infinite In the book entitled *Personality*, dedicated to C.F. Andrews, Tagore reflection goes thus –

> " the earth and the sky are woven with the fibres of man's mind, which is the universal mind at the same time. If it were not true, the poetry would be false and music a delusion and the mute world would compel man's heart into utter silence "[12]

Tagore realised that man is not only a part of his inhabited world but he is also a sharer of cosmogony. So, Tagore's idea of religious education and spirituality never belongs to any sectarian orthodoxy. Nor did he indulge in provincial or national parochialism. His ideal of internationalism is based on the common bond of humanity as a whole

Almost similar is Bertrand Russell's opinion in this respect He did not like that children be taught a strong sense of nationalism, so that when grown up they may exterminate each other. He felt the need of an International Government 13, which has not yet been given due importance by the national leaders of the Eastern and Western countries.

It is only man, in the realm of animals, who can seek not to circumscribe his existence within his limited region, but who can extend his bounds by virtue of his inherent supra-national and supra-material values like love, realization of beauty, sacrifice of self-interest for the cause of others, and above all, by virtue of his realization of the Infinite Such ideals from early education could make man achieve and contribute to the highest ideals of humanity

Tagore was no believer of God outside the realm of humanity. Asceticism is not the right path according to Tagore. His God is akin to the concept of the Universal Man, i.e the all comprehensive universal values, shared and contributed to by the individual members of humanity. Man, through his *Sadhana*[14], can manifest these values in his personality. Furthermore–

> ". ..We must know that within us we have that where space and time cease to rule and where the links of evolution are merged in unity "[15]

The Destructive Forces. Problems of Evil

Tagore was quite aware of the other pole of value, i.e.is disvalue or evil, which very often seems to overcast positive values. The cherished value that man loves man is very often overpowered by the facts of hatred, envy, greed, killing and all such evil cults of violence and terrorism These are much more dangerous than natural calamities. Man claims himself to be a rational animal. Yet, we very often witness that he is the most treacherous irrational of all animals. Arthur Schopenhauer had explained it in his work *On Human Nature*[16]

As a rational thinker man must understand that the path of violence, terrorism and treachery is nothing but an attempt at "short-circuiting history".[17] Man has to pay for it somehow or other, sooner or later.

Tagore was deeply pained at these evils. Yet, he pronounced in his lecture "Crisis in Civilization" (1941)–

> "And yet I shall not commit the grevious sin of losing faith in Man."[18]

The saviour of mankind will have to rise from mankind itself. Man has to retrace his path. Human civilization must call for a revision of goal towards man's "creative unity".[19]

Everett W. Hall, the Kenan Professor of Philosophy of the University of North Carolina (in the ninteen fifties) concluded his famous title *Modern Science and Human Values* with the following lines –

> " Western man today has achieved an exceedingly powerful tool for discovering facts and factual laws He has done this by ridding himself, in his procedure, of value thinking. He has attained nothing comparable in the area of value, although he has made some progress here in clearing his mind of factual thinking If he can cling to the conviction that there are values in technique for discovering them concretely, he may survive Otherwise he will be forced down the path to complete value skepticism Such skepticism invloves no logical inconsistency, but it stands in contradiction to man's whole nature and outlook. I doubt whether he can remake himself sufficiently to live with it, and I certainly would hate to see him try "[20]

The problem of India is manifold She lags far behind in material and technological self-sufficiency. She has her problems of over-population, influx of refugees, unemployment, poverty and disease, etc.

Apart from these, Dr S. Radhakrishnan, the renowned philosopher and former President of India rightly observed –

> "Among the national defects which prevent India from rising to her full height are an exaggerated sense of other worldliness and belief in fatality "[21]

THE CREATIVE FORCES: UNIVERSAL VALUES

The newer age has come. The East and the West have come closer to each other Material, intellectual and aesthetic exchanges between them have opened up newer universal values. Pragmatic values, measured through the rational standard of social sciences, are the guidelines for our material success. Yet, pragmatic values, according to Tagore, are more or less extrinsic and associated with the finitude of man. Furthermore, man has some sort of infinite aspects which are quite intrinsic to his good self. The unbounded aspects are manifested through his realization of Truth, Beauty and Goodness, resulting in *Ananda*[22], which may be approximately translated as blissful joy. Contrary to pleasure, which is a bit shallow and superfluous, *Ananda* incorporates both joy and some inevitable pain for the sake of realizing the totality.

These may seem high sounding in the midst of evil-trodden chaos But, Tagore was sure that disvalues have no ontological status in the system of the Universe, since these are but created by the selfish, conflicting and irrational ones, whose aim is not directed towards the optimum of man's well-being without hurting man.

Tagore drew clear distinction between progress and civilization [23]. While progress is concerned to the pragmatic aspects of a nation, civilization is expansive not only throughout the whole realm of humanity but also towards the infinite realm of the whole creation.

Science and Technology will continue for centuries towards newer and newer advancement. Some arts have joined hands with science for newer dimensions of creativity. Parallelly the universal values of humanity should be cherished, nourished and advanced towards a greater goal.

As there is metaphysics above physics, so also the ethical and aesthetic status of humanity is above the gross worldly living of mankind. Besides, humanity has always been in the process of evolution.It has to establish and re-establish itself over the ruins of natural calamities as well as against man-made evils. In Tagore's words –

> "All great civilizations are built upon numberless ruins – the toppled-down towers of victory and wealth. It is only human beings in this world of life who have found their greatness through the desperate urgings of unfavourable circumstances. Humanity has never been pampered, petted and spoilt by nature, but rather respected by being given constant opportunity to overcome the obstacles of failure and losses ... the people's life, like a waterfall, finds its full force of movement through courageous leaps from peak to peak of new trials "[24]

Tagore compared humanity to the sun which may be clouded from time to time but can never be extinguished [25] In the tug-of-war between the destructive evil forces and the creative forces of humanity, the latter will ultimately win. This must be the solemn challenge of human beings.

MAN-WOMAN RELATIONSHIP

Tagore cherished a very respectful attitude towards woman. He indulged neither in male chauvinism (sexism) not in so-called women's liberty (feminism). He believed not in the equality or sameness of man and woman, but in their complementary roles for the optimum harmony of humanity. Human society is made of two halves, men and women. Neither of them should take the upper hand subjugating the other half. If this happens, there will be disharmony. Man-woman relationship should be founded on self-respect along with respect for the opposite sex, compassion and fellow-feeling for each other, and their utmost co-operation in home and society. Both man and woman should realize that the permanent significance of home is not the narrowness of its enclosures but the eternal moral truth of human relationship revealing loyality and love. The essence of this truth could be extended from family to society, from society to the whole realm of humanity and from humanity to divinity, i.e higher humanity in man.

As a poet, Tagore always thought that romantic love is the fertile ground of aesthetic creativity In this respect he valued the fair sex in this way –

> "Creative expressions attain their perfect form through emotions modulated. Woman has that expression natural to her—a cadence of restraint in her behaviour, producing poetry of life. She has been an inspiration to man, guiding, most often unconsciously, his restless energy into an immense variety of creations in literature, art, music and religion "[26]

But she must not exploit and attack the weak corners of man to demoralize him. Much depends on mutual love and sympathy. On the other hand, much is destoyed through foul play from either side Some of Tagore's short stories, novels and dance-dramas reveal all such complexities as experienced in factual life. But if we choose to lead an ideal life, it is not beyond our reach. All such ideals are discussed in Tagore's lectures and addresses as well as in other works. The essence of Tagorean ideas lies in the underlying harmony even in the midst of apparent discords. That underlying harmony, if realized properly, can make our life a dynamic creative art.

CONCLUSION

Man's scientific discovery and artistic creativeness combined with universal moral values and self-esteem can create a newer world. If man frees himself from fractionalism and aspires after creative unity, he is identified with the universal and eternal man There are inevitable dissimilarities, evils and unforeseen calamities. Throughout the history of mankind, it is the universal and eternal man who has been endeavouring to overcome them, who has been trying to create a newer world. According to Tagorean notions, pessimism is a mere pose, quite transitory in the eternal flow of time. Optimism is humane and rational. That is why man can love, man is music-maker and dreamer of dreams. These are the qualities of the surplus in man. That surplus phase is akin to universality, eternity and infinity. Our education must aim at these values

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   Rabindra Rachnavali is henceforth abbreviated as *RR* The following number is that of volume.
2. *RR* 3, pp. 235-237.
3. *Ibid*, p. 236
4. *RR* 3, p. 392-393.
5. *Shyamali* is the feminine form of *Shyamal*, meaning grassy or leafy green Tagore used the word *Shyamali* as a proper noun to name not only this poetical work but also his earthen house at Santiniketan. *Shyamali* is also the title of the concluding poem of this poetical work. This poem is most affectionately associated with the earthen house, where Tagore resided from time to time
6. *RR* 12, pp 559-565.

7 Rabindranath Tagore, *The Religion of Man*, George Allen and Unwin, London, 1931, Chapter I. "Man's Universe", p 19

8 *Ibid*, Chapter XIV, p.191.

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Different Approaches to the Knowledge-getting Process

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In the history of philosophical thinking one of the most perennial problems has been epistemological. Philosophers, both Orientalists and Occidentalists, have always been thinking about 'how do we think, know and learn' There has been a controversy regarding the nature of knowledge, the way we learn, its sources, its reliability and validity. Before we can answer this question, there is another question related with the above question· what is knowledge about? One answer to this question was given by Plato who made a clear distinction between knowledge and belief and restricted knowledge to the apprehension of certain non-sensible objects, which cannot be perceived by senses Plato called these 'forms' or 'ideas'. The 'ideas' of Plato lie outside the world of everyday things, outside 'space and time' and can be known only by a kind of intuitive grasp. According to Plato, such knowledge is universal and undubitable to be apprehended by mind and not by senses. On the contrary, the object of senses like the shadows, rainbows, trees, men, etc do not have permanent properties or permanent existence. Hence, any proposition about their properties could not be undubitable We could only claim to have opinion, or at the most a strong belief, about them

A development of Plato's view of knowledge led, in the 17th century, to what is called the rationalist tradition associated with philosophers like Descartes, Spinoza and Leibnitz in which knowledge is regarded as analogous to the grasping mathematical truths. Such knowledge is demonstrative or deductive in nature; if the initial premises are accepted, and correct procedures followed, the conclusions would, of necessity, follow

An alternative view takes science as paradigm.

Here, knowledge is not a matter of deductions from self-evident principles, but comes as a result of observations and experiments in the empirical world. The order and regularity with which our experiences occur enable us to make large-scale generalisations about the contents and events of the world. Such generalisations can be used to explain and predict the course of events of future experience This is the empiricists' model of knowledge associated with philosophers like Locke, Berkley, Hume and James Mill. According to this view, substantial knowledge is not a body of necessary truths, but as contingent conclusions. It happens to be the case that fire burns, sugar tastes sweet and gases expand when heated; but it must be noted that contrary of empirical truths is always possible (sugar may not taste sweet), whereas contrary of the logical truths or mathematical conclusions would be impossible and so absurd (If A is greater than B, then it is absurd or logically impossible to say that B is greater than A)

Regarding the origin of the knowledge-getting process there are different approaches in some way connected with theories of knowledge advocated or propounded by rationalists, empiricists, phenomenologists and ultimately, by cognitive psychologists. Apart from that, such approaches derive their sustenance from more recent developments in philosophical and psychological thinking. For example, psychologists like Skinner made such a headway in 'experience' based knowledge, while free thinker like Rousseau tended to emancipate the child from any kind of external structuring. It may be noted that each one of these is based on a different set of assumptions about the nature of intellectual growth. In one view the basic impetus for intellectual growth comes from sources external to the child (people, events, books, etc.) while in the second, the major source of motivation and intellectual growth is believed to be flowering from within. The latter approaches are based upon a synthesis of these opposite points of view. The different approaches to the knowledge-getting process are "Flowering Seed" approach, "Clean Slate" approach and "Interactive Generator-transformer" approach. In the first, the child's mind is conceived of as a flowering seed with potentiality of growth embedded with it; in the second, as a clean slate and in the third, the child is considered to be like a generator-transformer of knowledge (Cowan, 1978, p 18-20). A brief description of these appraoches follows as under (Cowan, 1978, p. 18-20).

Flowering Seed Approach

According to this approach, if there is anything new it must come from within the child. It must have been residing in its original nature from birth. Learning thus becomes actualisation of what was potentially present. The environment, the home, the school may be necessary to tip off the actualization of this potentiality. The novelty in the learning process, thus, stems from the child's nature and not from the environment. Obviously such knowledge cannot originate in sense experience. Learning is thus unfolding of what was originally enfolding. The more recent advocates of this approach are psychologists and educational thinkers like Goodman (1960), Featherstone (1971), Holt (1964), Neil (1964), Silberman (1973). According to this view, the teacher is like a gardener who must feed and water the plants and should stand back, allowing the plants to grow. The gardener has no influence on what kind of flower will emerge; it is determined by the nature of the seed. The motivation and ability to organise are internal. In this view, the student plays the most active role in learning, the teacher's role is to provide an environment in which students follow their intellectual pursuits with as few restrictions as possible.

The champions of the Flowering Seed approach recommend open 'classrooms', what may be called the "Summer Hill" approach as originally given by A.S. Neil (1964). And their basic arguments against the clean slate approach are derived from Rousseau's philosophical contentions according to which the child is good by nature; and whatever he learns on his own (by his own experiences) is essentially good. It is only society that corrupts him.

The level of teaching and learning advocated by the adherents of the Flowering Seed approach to education is autonomous development level of teaching and learning. It is based upon psychedelic humanistic psychology and a radical existentialist philosophy within which people are basically pro-active, forward looking selves. Education here is completely student-centered. Each student's feelings constitute the final authority for his test of truth. Accordingly, teaching is an extremely *laissez-fare* process. Within this kind of teaching and learning, the teacher promotes each student's intuitive awareness of the self and eventually leads to self-actualisation.

The radical existentialist element in this approach is. I am a choosing agent; I am a free agent, I am a responsible agent. My responsibiliy, however, is, how I live my own life. In teaching, the teacher's job is to awaken the three awarenesses: choice, freedom and resposibility in each student. The teacher can do this by arranging appropriate educational situations without any direction, coercion, prescription, or imposition. Rousseau had termed such education as 'negative education', according to which development is something that just naturally happens. Students, as much as possible, are encouraged to live close to nature so that they may indulge freely in their natural impulses and feelings (Bigge, 1982, p. 286-290; Peters, 1981).

The Flowering Seed approach assumes a metaphorical process of unfolding in which knowledge is an invention springing forth from internal sources, where it is believed that children will develop best if allowed to actualise their own potential.

Clean Slate Approach

In contrast to the Flowering Seed approach to the knowledge-getting process the Clean Slate approach is based on a general principle stating that novelty is from without and not from within the child. According to empiricists, especially Locke, with whose ideas this approach seems to be ultimately connected, the child's mind is colourless, maleable stuff. Hence, the origin of learning is the 'outside' world. It is a sort of making an impression on the plastic mind of the child. The child's mind is like a 'Tabula Rasa' or clean slate to be written upon, or, an empty vessel, into which knowledge must be poured. It is assumed that there are mental mechanisms which function as present-day video tape recorders, and provide reasonably faithful copies of events occurring 'out there'. The Clean Slate approach leads to a reliance on teacher-structured experiences for students as the major road to knowledge. It also assumes that students are passive consumers, who must be externally motivated in order to become involved in learning (Cowan, 1978).

The Clean Slate approach to the knowledge-getting process has widespread educational implications, especially in the teaching-learning process. It gives rise to physicalistic behavioural memorising which consists of formation of either S-R linkages (classical conditioning) or R-S reinforcements (instrumental or operant conditioning). The adherents of this approach of the teaching-learning process aim at behaviour modification through 'stamping in' stimulus linkages. Teaching of certain performance-based skills bases itself on the 'physicalistic' behavioural type of learning.

Despite all the legitimate criticisms that we may make of the Clean Slate approach, in general, and its derivative the memorization level of teaching-learning, in particular, it would be unrealistic to suppose that a teacher can always avoid it. In any ordinary school situation, on occasions, even the most imaginative teacher will have no better approach than the memory level teaching. The fundamental skills such as spellings, arithmetical tables, alphabets, etc. are easily attained through a method of straight memorization.

Phenomenological View of Knowledge

Then came Kant on the scene of human thought who tried to offer a compromise between the two philosophical positions of rationalists and empiricists. According to rationalists' view, knowledge is apriori (not based on the experience of the world) but it is never new; while empiricists' knowledge is synthetic, new but never certain. Kant says that knowledge can be both 'synthetic' and 'apriori'. It is 'synthetic' in the sense that all our experiences of world are based upon sensations and it is 'apriori' because we are born with a set of innate ideas or "categories" of thought which are prior to, and the base of, any experience or perception. In fact these "categories" of thought make the experience possible. They are like cause and effect, space and time, etc.

Kant's explanation of the possibility of apriori sense experience is like Platonic view, which considered sense experience as a shadow of the ultimate reality. It was also unlike Descartes' view who held that through reason perceptions give us knowledge of the world as it was in-it-self. Kant's view is not in consonance with the empiricist's view even, because he did not think that even the most simple impressions were 'given', rather, according to Kant, they had to be constructed in accordance with our innate intuitions of space and time and other 'categories' of intellect in order to make any experience possible It was thus a Copernican revolution in philosophy--instead of our knowledge conforming to objects, let us suppose that objects conform to our ways of knowing them

Interactive Generator-Transformer Approach

After Kant came a man in the name of Jean Piaget on the scene of human knowledge who was a psychologist and philosopher rolled into one. He drew much upon Kant's phenomenalism and was also much influenced by some of the psychological thinkers of his time. He has approached questions, up to now exclusively philosophical, in a resolutely empirical manner He ultimately was able to resolve the age-old tangle concerning human knowledge. At one extreme, is the Kantian view that the infant is born with a set of innate ideas (the 'categories') which act as 'moulds' to give shape and meaning to the experience of the world; at the other, is pure empiricists' view according to which the infant's mind is like a clean slate to be written upon. Piaget goes a step further. According to him, the organisation of knowledge arises in interaction between the structured characteristics of environment and the active imposition of order by the child. We can say that in this interaction, one factor can never be evaluated without knowing the other. It is not possible to account for a particular cognitive organisation without specifying particular environmental conditions. And it is not possible to assess the impact of any environmental event without knowing something about the child's intellectual organisation. Intelligence, metaphorically, acts as a generator which transforms the raw input into usable power. In this approach the children are treated as interactive generator-transformers. The source of organisation is interaction and the nature of knowlege is a construction. In this approach it is assumed that knowledge is a construction arising as a product of interaction between external stimulation and nature of the child's cognitive structures.

The interactive generator-transformer concept of the intellectual functioning occurs via equilibration model of Piaget. His synthesis of the Clean Slate and Flowering Seed approaches is based upon extensions of principles used by organismic biologists to explain how living things interact with their physical environment.

Piaget assumes that intelligence adapts the organism to its environment. Adaptation, according to Piaget, does not simply mean conformity to extenal pressures. Rather it is through two possible ways in which an organism can function in relation to its environment. It can modify the environment to fit its needs and structures (assimilation), or it can modify itself in response to environmental demands (accommodation).

Assimilation is a process which actively transforms what it incorporates By fitting new elements into existing structures it preserves continuity and provides meaning. The role of assimilation in providing structure to incoming information emphasizes the active organising property of the child's intelligence. This part of Piaget's theory echoes, in part, the Flowering Seed approach with the childs' contribution to the learning process. However, if assimilation were the only process of incorporating events, then everything would be modulated to fit what we already know and nothing would be new. It is here that the other pole of the equilibration process plays its role The question is as to what happens to the structure as a result of assimilation of new material. The existing structures, as they attempt to transform and incorporate new information, are also becoming transformed in the process. This is accommodation. Accommodation, at other levels, can be seen in the fact that hypotheses (hunches, expectations) are often modified by feedback from observations and experiments.

The accommodation of the individual to the environment, as described by Piaget's theory, echoes the Clean Slate approach, showing how the child's intellect can be affected by external events. In the interaction between person and environment accommodation is the changing, discriminating side of intelligence while assimilation is the more stable generalising side.

The view of children as clean slate, flowering seeds or generator-transformers extends well beyond the classroom curriculum approaches. Both formal and informal theories of parenting and child-rearing tend to adopt the same metaphors; some look to parent treatment and example as the major factors determining child characteristics; others believe that children will develop best if allowed to actualise their own potential; and still others look to the interaction between parental treatment and child's characteristics to account for the kind of adult each person eventually becomes.

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A Search for Befitting Education in Urban Locale

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The urban field has been subjected to multi-disciplinary research. In the formulation of any policy related to urban education issues some theoretical knowledge is necessary in the following subject matters . urbanisation, urban functions, urban internal structure, emerging urban systems, urban social organisation, urban community development, urban social problems and urban planning. In the context of the present-day crisis in urban areas, one need not belabour with statistics referring to population, pollution, poverty, tension, prostitution, pestilence, gambling, drug addiction, power and politics. We have read them and heard them and flinched at them and perhaps wearied of them. This provides an impetus to examine the urban social problems that have some implications for education. The year 2000 is just round the corner. Social changes are taking place swiftly in the cities. Education being one of the most powerful social agencies cannot afford to remain a silent spectator. To orient our educational process to grapple the nagging problems prevailing in urban areas, an elaboration of various issues related to urban education is provided—in simple terms with obvious correctives in mind

Effect of Industrialisation and Modernisation

Ever since India's independence, the country has covered many a milestone and launched herself on the course of planned economic development Education is the second highest sector of budgetted expenditure, after defence A little more than three per cent of the Gross National Product of the country is spent on education. The data indicate that in many countries the proportion of GNP spent on education ranged around six to eight per cent. There are only a few countries in South Asia like Burma, Pakistan and Afghanistan which spend a lesser proportion of their GNP on education than India It may be recalled that the Education Commission (1964-66) had recommended that this should be increased to the level of six per cent Inspite of the fact that the outlay and expenditure on education showed a successive increase in each plan, resource-gap for educational needs is one of the major problems (Challenge of Education -- A Policy Perspective. Government of India, 1985: 25).

In 1950, with the setting of the planning commission, India has an impressive six per cent growth rate of industrial output Industrialisation and modernisation become the key elements of economic growth. For various socio-political reasons, life in towns and cities has been made more smooth and easy flowing. The enterprising persons have always been attracted to it to offer their services and commodities in exchange of the richness of urban life.

Rural Push and Urban Pull

The unending flow of migrants from rural areas is the main contributory factor for the increasing trend of the rate of growth of urbanisation and urban population. In 1981, the urban population was only twenty-three per cent which is not very high but by the end of 2001, as the Registrar General of India has shown, it is likely to grow to between 30.13 per cent and 34.99 per cent Today India's urban population is around 160 million which gives us the fourth largest urban population of the world (Hindustan Times, December 2, 1988). As the masses continue to crowd into urban areas, economic strains and stresses simultaneously keep on increasing. Despite poor social and economic conditions, rural-urban migration continues and those who live there remain. The poles of attraction are strong. The main feature of an urban society is perhaps more living facilities and amenities of life in less living space Unfortunately, the growth of cities has taken place without proper consideration for application of principles gained from the study of man Planning has been neglected. Development has taken place piecemeal, with regard primarily to land use economics, with little thought to the personal and social needs of the inhabitants or the total cost to society if those needs are not met (Novick 1972,22). This complex of heterogenous socio-cultural and economic communities has widely different needs and aspiration levels. The Bureau of Community Environmental Management (BCEM) of the Department of Health, Education and Welfare in the USA made a significant study of modern man in his contemporary urban environment – from biological, psychological and social perspectives. The constant rural push-urban pull has led to uncontrolled development Major efforts aimed at solving the problems of urban areas centred on the ultimate impact of this uncontrolled development.

Urban Decay

Statistics on disease, growing social disorder, and empirical observations of human behaviour strongly indicate that with urbanization, people have become increasingly exposed to the social processes which, when prolonged, cause anxiety, alienation and apathy When people become apathetic, they display indifference toward their neighbours and community. Apathy is a major cause of urban decay It means that homes will deteriorate. Apathy leads to a host of maladaptive social behaviours. The result is the tearing down of both the physical and the social structure of the human settlement. This has aculturisation and deculturisation effects to the extent of developing pseudocultures, miscultures and degenerating and destructing traditional cultures. Economic disparities due to the underprivileged conditions of certain sections of the community living in cities such as the slum-dwelling population which constitutes beggars, working classes, scheduled castes, and unemployed and underemployed persons are growing at an alarming rate It is unfortunate but true that most of the benefits of current social and educational policies go to the top of the population and the gap between the haves and the have-nots is ever-widening. Such misappropriate revenue distribution, unequality of opportunity and inadequate policies are causing expansions of slums which become the breeding ground for vices and anti-social activities (Bagchi 1989 01). In fact, urban population is growing so fast that urbanization becomes such an aggressive process that unless it is prevented the entire urban India would be reduced to a big slum. The urban poor are the greatest sufferers, for they continue to be underfed, unlettered, unattended and exploited. Frustration and fatalism are the constant companions of these poor children. These children form one-sixteenth of our workforce, the highest incidence of child-labour in the world. With these early social explorations, experiencing worthlessness and unwantedness, they enter into life with dejection, inconsistency and instability. These deprived urban poor children ask for basic reforms in education.

Education for an Urban Society

In times of economic difficulty with a very high rate of inflation, when jobs are hard to find, it is necessary to decide what knowledge will be the most valuable to majority of the students and society. Understanding urban man is the key to provide education. Many of the studies now underway by researchers across the nation are designed to supply the answer needed to 'cool' the cities, to alleviate the tensions in the residential environment, to satisfy the needs of the people. People are individuals, each requiring different services, each with his own goal. When people's needs are understood in the context of physical and social milieu, education can be monitored, maintained and changed to reduce undue urban stress Educational institutions in urban metropolis, cities and towns of today cease to exist as "sanctum sanctorium" and are usually centres of all types of major social furores and, therefore, present a network of diversions and distractions unsuited to a scenario of serenity for educational environment. It is necessary, therefore, to understand critically our function as educators before we seek better legislation, more money and better facilities.

The major premise that the existing system of education is for the masses is not true. The origin of the modern system of education with the basis of the principles of manufacturing industries is urban. Even most educators and educationists were and are not only of urban origin but also urban based. However, the type of education given in different schools in urban locale shows a wide variation from missionary schools to municipality and government-aided private schools. It is well known that urban literacy is higher than rural literacy. But does it also imply that levels of literacy and educational development in urban areas is higher and better than in rural areas. What is the function of the city schools? Only a few educational institutions in urban areas cater to individual needs of students and make them to keep pace with time. Such institutions are mostly elitist with the result that slum dwellers and children from other underprivileged sections of society, although they live in urban areas, are constantly being denied befitting education that will help them to accept future challenges. In order to meet the educational requirement of children coming from the oppressed sections of society, schools suited to their requirements without any rigid fixed hours of schooling, will have to be provided. In urban areas large mobile groups, families exist Children of such mobile groups of population cannot be enrolled in immobile schools. Education system should take cognizance of this factor. Beside this, there are acute transportation problems. One solution to this will be to have neighbourhood schools, the idea was first aired by the Education Commission, 1966 Education that is to be provided in rural and urban areas cannot follow a same set pattern and this has been reiterated by no less a person than John Dewey more than half a century back. Curriculum for urban schools will have to take into account the needs of the urban children, the life they are leading and the circumscribing of experiences they have access to. In addition to this, the values they are forced to accept because of proximity will have to be taken note of, and a proper value education should be built into the system. Otherwise, the debasing of the cherished way of life cannot be checked at all. Urban education should, therefore, be pluralistic and individualistic although vouchsafed as democratic and socialistic but failed to help students to self-actualise, to come to know and respect themselves as human beings with intrinsic value and worth The primary function is to "lead out", to develop a sense of hope, a sense of belongingness, a sense of power. The prevailing "inferiority-myth" among the weaker sections of the society is the primary reason of the problem of the drop-out from the present educational system (Chisholm 1973 : 20). Apart from the student's individual personality hang-ups, it can be seen the sense of futility the student experiences often unconsciously. It is apparent to him that he is in no way better prepared to cope with the outside real world. To the drop-out, education in terms of present school curriculum is irrelevant, that is, not meaningful to what he sees and understands of the world around him. It is imperative to make students realize that there is a very real reason to be taught, to be educated, to be lead out of low income, high unemployment, poor health care; to be led out of ghetto life The emphasis has to be on teaching job-related skills and on disciplining students according to the norms that guide the workplace. This means decentralising the curriculum-making process at least partially with a view to making it more relevant to the immediate need and demand of the time and place in question If, however, the formal system of education cannot respond to such social issues, at least state education departments in collaboration with other national bodies and institutes dealing in such areas can draw out a plan of action that can be disseminated through non-formal agencies It is necessary to consider curricular content form and the process of decision-making simultaneously. It is not argued that curricular content will differ by social classes, what is meant is a greater flexibility of the curriculum so that it will become relevant, safer, less controversial, less likely to alienate any powerful interest group. Curricular content of the urban schools should give students the ability to interpret the prevailing and emerging social problems in urban areas and to reflect critically on what is happening in their daily lives. Moreover, participation in making policies for such a curriculum is not merely an individual act; it is profoundly social act as well. Without such efforts children of the weaker community will feel that they are not treated equally, do not have the same chance of success academically and are disadvantaged in finding good jobs in a society which increasingly insists on educational attainments for positions more and more of which require sophisticated skills This will, in turn, cause students to conclude that effort to learn in school is a waste of time. In such an environment, even the best teachers face discouragement, a fact which contributes to the vicious cycle. What is needed is to realise that our education structure is too large, too insensitive, too out of touch with the prevailing need of the urban youth. The result of the curriculum production process looks like an exercise in futility.

Preoccupations of urban youths with the use of drugs and their experimentation with sex are psychological manifestations of hopelessness and unhappiness they perceive in the world. Much of the young world is controlled by educators, that our function is, and must be, directed toward alleviating economic, political and social injustice. Indeed, what else can the purpose of education be? Tomorrow's school will have no rejects – it must guarantee every child basic experiences, a high minimum of accomplishment in fundamental skills. need to survive, adjust and compromise in urban life must utilize the individual's own rhythm. The school of tomorrow will be neither behaviouristic, nor cognitive, nor child-centred, nor discipline-centred. It will be all of these. It requires new fundamental thinking and new, fundamental structure – from curriculum to teaching methods, from goals and objectives to responsibility, accountability and performance. It is, therefore, important to realise that beneath the rhetoric and confusion—we really do understand the problem. The implicit demand is to shift from "instruction" to "discovery", from "goal-orientation" to "role-orientation" and total involvement of our school dealing with human problems and situations. The student brings to the classroom his entire self. The curriculum will not only be irrelevant, rather harmful, if it takes care only a part of it. Let us, then, prepare a curriculum in which the student is expected to find in school basic experiences for his life. Only then will we be able to educate the whole of the child. It may appear to be a kind of euphoria but in reality this can be achieved by different co-curricular and curricular activities. What bothers the growing child most is the meaning of values, in the meaning of "good" while ignoring the concept of "good" that is based on adult standard which is foreign to them Beside this, they often observe in the world outside school a kind of value system and behavioural norms which is quite different from what they have been told in their schools. What sort of experience the school has to offer through different co-curricular activities and through social studies and literature to urban youngsters can best be illustrated by stating a few lines from a letter written by Abraham Lincoln to the headmaster of his old school : Child is supposed to learn that all men are not just and all men are not true. Teach him not to follow the crowd when everyone is getting on the band wagon. Teach him to listen all men .... but teach him also to filter all he hears on a screen of truth, and take on the good that comes through. To scoff at cynics and to beware of too much sweetness and to close his ears to a howling mob . . and to stand and fight if he thinks he's right. Such pragmatic approach if we can have in our school system, then only we can hope for educating whole of the child helping them finally when they become adult to cope up with the complexity of the urban life they have yet to experience.

Conclusion

If our aim is an urban society in which all people are equal in their opportunities to experience success and to exercise control over their own destinies, not an urban society in which the chasms between groups grow larger every day, then we must deal now with these larger social problems prevailing in urban areas to provide a befitting education that would create new possibilities of employment for the many families who will suffer the most if the economy continues its downturn.

What we need is a new rationale – a new purpose. Such a statement of purpose will affect policies as well as educational practices in urban areas. Instead of beginning at the policy level, we need to begin at the purpose level. We need not wait for the government to act or for any agency to make a pronouncement concerning urban educational issues. At this point it is important to take a scholarly look at the information that has been amassed regarding what we should teach in the context of the needed solutions for lingering urban social problems, how it should be organised, who should make decisions and what we as educators should and can do about (and in) an urban society marked by large and growing disparities in wealth and power If it is correct that, like other social agencies, the success of the present-day educational practices in the cities is very much tied to conditions in the larger society, then, we must focus more vigorously – starting now – on the democratic deliberation about such social goals? Such a question is a part of the solution It is important to remember that in easing the current crisis and preventing the future crisis before it occurs some vital decisions should be taken about policies and educational practices

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Information Technology for Education

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Information technology encompasses computer, communication and software tools Some kind of learning will occur from the use of any information presentation system However, we can raise a variety of questions and discuss them as below.

What Kind of Knowledge Structure an Educational System must have?

The institutional requirements echo the hierarchical concept of knowledge; they are the outward expression of the well-known notion that easy topics should be learnt first and difficult ones later. But there is no good evidence that learning in general proceeds in this way; even if teaching sometimes does.

Seymour Papert of MIT(USA), who has reflected most creatively on the implications of computers for education, argues that this relative lack of success is inevitable, given the paper and pencil technology on which the school system is still largely based. For him, whether learning is achieved or not is not a function of the complexity of what is to be learnt but of the structure of the environment He argues that "to say that intellectual structures are built by the learner rather than taught by a teacher does not mean that they are built from nothing. On the contrary : like other builders, children, appropriate to their own, use materials, they find about them, most saliently the models and metaphors suggested by the surrounding culture"

What Type of Learning is an Educational System Intended to Support, and What Learning Methodologies would be Effective?

It is estimated that by 2000 AD, in industrialized countries 50 per cent of the work force will be working with computer terminals. A recent survey of 250 computer training organizations in the USA reported that 97 per cent of the organizations were using some form of technology-driven instruction. Of these, video was the most popular followed by CBT Developing countries such as India are in the process of inducting newer technologies and management practices in organizations. Organizations invest in training, management, personal development as well as technical skills

The words 'instruction' and 'training' are often used interchangeably. Instruction is a generalized term referring to any situation in which an environment is systematically and deliberately manipulated such that some learning takes place. Training, on the other hand, refers to adult, post-experience learners. The skills developed are essentially in relation to self-development, a profession or a vocation.

Bloom developed the taxonomy of educational objectives with primary reason to provide for classification of the goals of our educational systems. This would also provide a common framework to discuss curriculum and teaching methods The taxonomy was derived for each of the cognitive, affective and psycho-motors domains The cognitive domains of educational objectives could be broadly categorised into two divisions, namely, knowledge and educational abilities and skills which could be seen as another characterization of the declaration vs. procedural distinction. The lowest level in the taxonomy is knowledge which emphasizes on remembering of information ranging from specifics to ways and means of dealing with those specifics to the universal and abstractions of the field Under intellectual abilities and skills there are five categories, namely, comprehension, applicaton, analysis, synthesis and evaluation.

Earlier the theory of "learning by being told" was propounded. Later on Dewey's philosophy of "learning by doing" as an instruction approach was adopted Experience has shown that adults learn best when they are given examples from practical situations and are given a chance of doing. We have to now examine which media facilitate "learning by doing" at large.

What Type of Media-based Training Alternatives are Available?

The term 'media' refers to video, computer, print, tape-sliders, and multi-media technologies like interactive video, etc. All these media have inherent strengths, which make them powerful modes of instruction. Video has potential of presenting the viewers with real and symbolic visuals, diagrams and animation coupled with audio (music, narration, sound effects, etc). Many special effects such as split screens, different types of transitions from one scene to another and superimposition of shots from different sources are possible with video. Video may be best suited for training in concrete concepts such as engine, identification of items such as parts of engine, attitudinal inputs such as instilling national pride, prodedural tasks such as starting an engine; and problem solving such as repairing an engine. This, however, provides one-way instruction, where a learner is a passive receiver This shortcoming can be overcome, to some extent, through computer-based training (CBT) and, to a very large extent, through the use of multi-media technologies like interactive video.

The second medium is computer. Microcomputers are becoming less expensive, smaller in size, more powerful symbol manipulative tool with attractive features of colour, sound, graphics, animation, user friendly programmability and interaction There is growing emphasis on use of sophisticated software and graphics. Screen cursors controlled with a joystick or mouse, touch screen, graphic "windows" and programmable or "soft" keys are becoming popular. Speech input may soon become viable

Computer can provide support for .

(i) Category handling : An important aspect of learning is that of building categories, i e. to unite and distinguish things, to recognize similarities and differences, and to relate new things to those we know by in- or excluding them into or from categories we know. The 'type' concept of higher level programme and 'class hierarchy' of object-oriented languages provide support for category handling.

(ii) Gestalt flexibility Even 'lower level semantics' of the information may be kept flexible to augment the learners' performance in understanding the important 'higher level semantics'. Gestalt 'information' means that the information of the whole is more than the sum total of information due to their interrelationship

(iii) Model use : Computers can store and process information , the processing capabilities can help to make much better use of dynamic models

The third medium is the interactive video which refers to an arrangement in which video playback device is interfaced with computers. The video disk contains motion video which is like the regular video-tapes and in addition it can store still images also. Access to an information on a video disk is random while in video tapes it is linear The disk also has two audio tracks which could be used for multi-lingual recording. The computer can selectively start, stop and freeze displays from the video disks and selectively to one or both audio tracks Though it is still relatively expensive to develop, the costs are slowly coming down. Newer technologies like DVI (digital video interactive) and CDI (compact disc interactive) which allow digitization of full motion video and CDCOM which allows storage and retrieval of vast amounts of text, pictures and audio hold a lot of promise. These technologies, collectively called multi-media technologies, may eventually replace the existing analog video technology. However, whatever the technology, the power of multi-media is likely to further revolutionize the concept of training and have a far-reaching impact on learning.

The fourth medium which comprises texts and graphics printed in a big form is collectively called the print-media Apart from classroom instruction, this is the oldest and still the most commonly used mode of instructional delivery. Its importance is not likely to be diminished with the advent of newer media options. This is because its portability and consequent accessibility is yet to be matched by alternate media. The print medium provides ideal support to video and computer-based instruction modes.

What is the Difference between CAI (Computer-Assisted Instruction) and ICIA (Intelligent Computer-Assisted Instruction)?

Most CAI materials use one or more of the following features : (Drill and Practice, Reinforcement and Remediation); (ii) Dialogue (Tutorial); (iii) Simulation and Demonstration; (iv) Games of Competition and Cooperation; (v) Approaches to Problem Solving; (vi) Discovery Learning; (vii) Reasoning by Analogy; and (viii) Association with Stories.

Computer programmes that use artificial intelligence (AI) techniques to help a person learn are called intelligent computer-assisted instruction (ICAI) or intelligent tutoring systems The design and development of such programme is at the intersection of computer science, cognitive science, and educational research. Cognitive science investigates the mechanism of human intelligence. Computer science significantly improves learning (or job performance in the case of training) To date, computers have not had the kind of dramatic impact on education they have had on other aspects of society (e.g., transportation, finance, manufacturing, and entertainment). Perhaps ICAI will change this situation.

Yet few ICAI programmes are currently in regular use in classrooms. Why is this so?

There are major reasons why ICAI has not had practical benefits so far. First, ICAI programmes are computationally demanding. Second, the problems of understanding how people learn are extraordinarily complex. Almost every cognitive scientist would quickly acknowledge that our current theories of learning are woefully inadequate to explain or predict how people learn. Third, the number of scientists invoved in the ICAI field is quite small The intersection of computer science, cognitive psychology, and education has not produced a very large set of individuals, probably less than 100 experts worldwide!

Five major paradigms that currently make up the ICAI include : mixed initiative dialogues, coaches, diagnostics tutors, micro-world concepts involving tools to explore a problem domain, and articulate expert systems. The important issues in developing ICAI programme are : (i) knowledge representation, (ii) modelling students understanding; and (iii) inference mechanism capable of reasoning from one item of knowledge to another.

Table 1 shows difference in CAI and ICAI in terms of the following issues:

(a) Goals of developers;
(b) Theoretical base,
(c) Structure and process of the system;
(d) Instructional principles;

TABLE 1
Difference between CAI and ICAI

Issue	CAI	ICAI
Goals of developers	Development of instructionally effective and efficient systems	Exploration of AI techniques in instruction
Theoretical base	Learning theories and instructional principles	Cognitive science
Structure and process of the system	Frame-oriented static structure, prespecified , system initiative process	Process-oriented dynamic structure, generative, mixed-initiative process
Instructional principles	Various principles, including expository, discovery, and combined approaches	Mainly discovery approach
Methods of structuring knowledge	Mainly task analysis for identifying subtasks and content elements	AI knowledge representation techniques for organizing knowledge into a data structure
Student modelling	Binary judgement of student responses, prespecified response sensitive procedures, quantitative methods	Qualitative evaluation of student responses
Instructional formats	Various tutorial (expository) drill-practice, games, and simulations	Mainly tutorial (inquiry) and games
Subject matter areas	Virtually any area	Limited to well-structured areas
Development process and team	Systems approaches, instructional designer, subject matter expert, and developer (programmer)	Developer's own approach, mainly AI expert (or knowledge engineer) only
Validation methods and criterion	Formative and summative evaluation, instructional effectiveness and efficiency	Mainly technical debugging functional running of the system
Hardware and software	Mostly general-purpose hardware, general-purpose languages, authoring languages and authoring systems (aids)	Specific AI purpose hardware, mainly LISP and Prolog

(e) Methods of structuring knowledge,
(f) Student modelling,
(g) Instructional formats;
(h) Subject matter areas;
(i) Development process and team;
(j) Validation method and criterion; and
(k) Hardware and software.

A more recent form of CAI is intelligent computer-assisted instruction (ICAI) ICAI is an example of the application of artificial technology to instruction.

Hypertext added explicit non-linearity to 'classical text'.

Hypertext increased Gestalt flexibility mainly in the sense of flexible sequences and amounts of information presented to the learner, and in many cases in the sense of increased amounts of structural information. It provided more freedom, but guidance through the information space became worse than that of with textbooks which basically enforce a sequential tour through the information; the notion of 'getting lost in a hypertext' arose The requirement of 'staggered guidance' is not fulfilled by standard hypertext systems

The advent of multiple mdeia on the computer opened a new opportunity for more flexible Gestalt of information : nodes could be based on the most appropriate media, alternative media could be used, time-variant concepts could be better transformed into information

The hypertext system should offer means for composing different media into 'integrated multimedia' and for integral manipulation. Hypermedia systems to date offer too little support. Semantic networks have been successfully integated with several hyper.... systems.

The envisioned system marries the node/link based' hypertext paradigm with the object/method-call based 'object-oriented' paradigm which provided for dynamic processing features Intelligent hypermedia processing system, including category handling, media synchronization, non-procedural programming, dynamics, structure, and common semantics; 'collaboration' and 'appearence' are integrated as well.

The multi-media technology is just emerging and showing in some specialized products like CD-I from Philips, CDROMXA from Sony and Philips, DVI from Intel, Digital Video Overlay from a variety of manufacturers, and Fujitu's Hypermedia Personal Computer : FMTOWNS. Multiworks (multi-media integrated workstation) is being developed under the ESPIRIT programme of EEC.

New media will have·

- music which is structured sound that is stored as music sheets equivalent and synthesized by the system
- handwritten text which includes handwritten characters with no recognition (bitmaps) and recognized handwritten text. In multimedia workstations special devices are provided for handwritten input : electronic paper and document recognizer.
- moving pictures which handle real life animation of images
- all combined media.

ICAI researchers adopted Dewey's philosophy of "learning-by-doing," as the basic instructional approach in the system. Thus, in most ICAI systems, instructional methods take a student-centred discovery form, and tutorial dialogues are basically determined by the student's conceptual understandings and learning behaviours

The development of most CAI programmes has taken a kind of systems approach that requires some or all of the following processes : analysis, design, development, formative evaluation, implementation, summative evaluation, and maintenance.

For future development of ICAI, we may propose (i) more focus on instructional effectiveness and efficiency, (ii) emphasis on the prespective process of the system by integrating various instructional processes and strategies,

(iii) involvement of instructional psychologists and subject matter experts, (iv) formative and summative evaluation of the ICAI systems, and (v) more ICAI programmes on PCs.

In What Way Will the Hyper ...... Systems be Useful in the Instructional Educational Context?

Modern computers systems share a foundation which is built of dictionaries containing files. These extensions of the raditional "flat" text fall under the general category of hypertext (also known as nonlinear text). Ted Nelson, one of the pioneers of hypertext once defined it as "a combination of natural language text with the computer's capacity for interactive branching, of dynamic display... of a nonlinear text... which cannot be printed conveniently on a conventional page "

The concept of hypertext is quite simple : Windows on the screen are associated with objects in a database, and links are provided between these objects, both graphically (as labelled tokens) and in the database (as pointers).

Some people are willing to make extravagent claims for hypertext, calling it "idea processing" and "the basis for global scientific literature". Such tools as window systems, electronic mail, and teleconferencing share features with hypertext. As videodisc technology comes of age, there is growing interest in the extension of hypertext to the more general concept of hypermedia, in which the elements which are networked together can be text, graphics, digitized speech, audio recordings, pictures, animation, film clips, and persumably tastes, odors, and tactile sensations. At this point, little has been done to explore the design and engineering issues of these additional modalities, although many of the high-level design issues are likely to be shared with hypertext

The evaluation of hypertext was in the past driven by a requirement of more flexible Gestalt of information.

We may distinguish hyper . .. (hypertext/hypermedia) from hyper.... systems (systems which allow the creation, manipulation and/or consumption of hypertext/hypermedia). A new concept of Hyperinformation processing is emerging with the addition of structuring in Hypertext and Hypermedia, and Knowledge Representation in intelligent Hypermedia.

Why should we Introduce Multi-media, Such 'Exotic' Media as Music, Audio and Motion Video in a General Purpose Computer?

Two major evolutionary lines of computer development can be identified .

(i) Traditional number processing line to provide controlled and effective access by these computing tools to a variety of databases.

(ii) Personal workstation evolution line to provide text processing and general desk-top-publishing facilities to every user. Computer is used to process and control all information that is accessed or produced by the single user.

With the introduction of new media, computers can be used to improve the effectiveness of interpersonal communication by providing facilities to choose the media. Different media have different characteristics. No medium is superior to any other one in all circumstances.

Multi-media workstation is intended to be designed to integrate "traditional" and new media in a consistent environment where they can be processed with comparable facilities and tools.

The key elements of the architecture of the multi-media workstation are :

- Use of intelligent controllers to provide the following functionalities .
  - access to multi-media devices
  - improved man-machine interaction

  - high performance, high capacity mass storage to meet multimedia requirements
  - access to public and local area networks.
- Choice of Unix as the standard operating system enhanced with real-time facilities needed to effectively handle real-time media. Current UNIX standard does not provide the real-time features.
- Development of rich programming environment to allow for easy development of interactive, multi-media applications. Object-oriented paradigm, will provide an extensible environment of re-usable software components that can be used to quickly develop new, multi-media applications.
- Provision of multi-media authoring tools. A hypermedia-based authoring tool, called Multicard, will be developed to create and change interactively hypermedia documents, containing all simple and obtained media. It becomes a requirement therefore to combine authoring and knowledge management tools to make available a complete authoring environment.

The general architecture is structured in four layers : hardware, operation system services, programming and application environments.

How do Classroom and Stand-alone Media-based Training Environment Compare in Terms of Effectiveness, Cost and Convenience?

There is no intrinsic reason why educational computers should be used to further formal teaching methods. In fact there is every reason why they should not, because they are especially good at handling non-hierarchical knowledge structures. By their versatility computer programmes can promote analytical reasoning, invention and creativity as well as deduction and simple inductive inference and their structures capable of evolving as new topics are understood.

There are minor distinctions in the terms such as computer-based education (CBE), computer-aided instructions (CAI), computer-based training (CBT). CBE would include CAI and computer-based management of schools. CBI refers to the situation in which interactive learning takes place with help from the computer. Typically, a learner would be presented with information, asked questions, given feedback, taken through remedial instruction when necessary, allowed to seek specific information, asked to manipulate variables and observe the cause-effect relationship, and so on. This medium has been proven to be a cost-effective instructional alternative to classroom instruction.

A study by Norrie reveals that traditional instructional costs have been increasing at the rate of 13 per cent per year, whereas CAI cost is decreasing at the rate of 5 per cent per year coupled with 10 per cent improvement in performance.

Table 2 shows the difference between classroom and media-based training in terms of effectiveness, cost and convenience.

Which Problems are being Envisaged in Multi-media Technology Integration and Multimedia Communication Standardization?

Multi-media integrated work station faces many technological challenges:

- Media such as motion video and CD-quality audio require high throughout at hardware, software and communication levels and/or very sophisticated compression techniques.
- Real time synchronization of media coming from different sources poses strong requirements on system design and it may

TABLE 2
Classroom and Media-based Stand-alone Training

Consideration	Classroom	Media-based Stand-alone
Effectiveness	Active interaction between learners and trainers is possible	Active interaction between learners and instructional mode is possible if computer-based instruction or interactive video instruction is used
	Mastery-based instruction is usually not possible because of large number of learners	Mastery-based instruction is possible because learning is individualized
	Questions and comments get immediate reactions from peers and trainer	Design could facilitate provision of specific information but prior anticipation of possible questions and requirements is critical.
	The content and instructional method may vary depending on the preparation and expertise of the trainer.	The content and instructional method are consistent over the period of use of the materials.
	The time devoted to learning depends on the time fixed for classroom sessions It is the same for all learners	Time for learning can vary depending on the needs of specific learners
Cost	Recurring costs of trainer and learner time, travel costs, resource utilization (classrooms) and consumables such as handouts can be high	One-time investment in development of instructional materials and establishment of training centres, can be very high
	The above costs are incurred each time the course is conducted	Recurring costs are for maintenance of hardware, occasional trainer time for consultation and consumables such as work-books, etc
	In case the number of learners is small, the basic costs (trainer time, travel, equipment, facilities and other resources) which are incurred remain the same	Except for the basic facility costs, the ongoing cost is directly proportional to the number of learners
Convenience	Each time the course is conducted, trainer and learners have to gather at one location for a specific time period.	Learners can go through the instructional material at thier own pace, near to their place of work and over extended time periods
	Quick or partial review of learning is not possible	Learner can go through the learning material as many times as desired.
	Record keeping is manual	Record keeping is automatic Various types of reports can be generated from the data collected during learning
	Learners do not have privacy in raising questions and clarifying doubts. Their expertise or lack of it can get exposed in the group	Learning is private The performance of a learner is known only to the learner and may be to the consultant
	Skilled professional trainers may not always be available	One time effort of skilled professional development team can have replicative effect everytime the instructional product is used.
	Training is not available as and when the learners want it	Training can be made available as and when the learners want it and for whatever duration they wish to spend on it.

require specific solutions.

- Storage and retrieval techniques must be capable of assessing continuous streams of data with real time constraints.
- New user environment models to assess and manipulate objects must be defined and designed.
- Standardization of the following representation formats:
    - Storage format and representation format for CD-ROM, CD-I, and CD-ROM XA
    - Representation format including animation processing.
    - Compression-expansion of still and animated pictures.

There are NTSC, PAL, and SECAN standards for analog video formats. D-1 and D-2 are for digital video production. MPEG (Motion Pictures Experts Group) is video compression standard for random-excess media. JPEG (Joint Photographic Expert Group) is still image compression standard. National standards for multi-media technology in multi-lingual environment need to be developed.

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A Thought for Value-oriented Education

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INDIA is in the grip of Octopuses of problems to its neck. Among the many dangers threatening the very existence Indian society and which are pulling the binding threads of Indian unity and integrity apart, mention can be made of over-population, unemployment, communalism, regionalism and the politics of caste and vote banks. There are innumerable causes for these problems. Different people mention different reasons for the present state of affairs. An economist shows mass poverty as the main contributory cause, a political philosopher thinks that it is because of the lack of clear-cut ideals in political life, a sociologist points to the population explosion and the traditional remnants of social structures like caste and beliefs, whereas a psychologist feels it to be due to the loosing ground of solace-giving institutions like family and religion.

Let us examine how an educationalist views these problems and what he thinks are the reasons and how he hopes to overcome them An educationist views these problems through his own perspective. His is of a synthetic view. Besides being in agreement with all the aforesaid thinkers, he thinks that the main reason for this state of chaos and anarchy in the minds of people of the society is the failure of the system of education to rise to the expectations and aspirations of the people.

An Abysmal Gap

"Long years ago we made *tyrst* with destiny... at the stroke of midnight, when the world sleeps", we "awoke to life and freedom". Yes, we awoke to life and freedom from the earth wetted with the sweat and blood of innumerable sacrifices made by countless heroes of our freedom struggle. Not only that we also rose with souring expectations and unrealisable hopes. We thought of our ancient glory, and the light of its glitter. We framed out expectations. With these expectations we adopted democracy not only as a form of

Government, but also as a way of life. But democracy, among other things, demands discipline, mutual regard, a sense of sacrifice for the common good and, above all, ability to arrive at wise decisions – to choose between good and bad, between truth and falsehood, between beautiful and ugly, between worthwhile and trivial and between chalk and cheese.

It is here that our system of education grossly failed. It failed to provide our new generation sufficient knowledge to be able to discharge their duties as wise citizens. It could not bring about the material benefits as the people expected. It failed to equip the future citizens with skills, abilities, useful knowledge, right way of thinking, and, above all, in making them imbibe the necessary values. It is the lack of value orientation to the system of education that brought about the present friction in the movement of social structure. Values act as grease, as lubrication, in the movement of this gigantic social structure and avoid friction which results in the breakdown of social life at different levels.

The Present State

At the time of partition Gandhiji spoke of India thus: "India today seems as an inferno of madness, and my heart weeps to see our homes set on fire by ourselves. I find darkness reigning over India, and my eyes vainly turn from one direction to another to see light". Have things changed since then?

There is only one way out. It is through value-oriented education that we can change the shape of things to come. This should also be supplemented by the development of necessary skills for material growth. This demands discipline, sincerity and, above all, hard work. A substantial effort is required. What is required is not parroting the ideals, but putting "the shoulder to the wheel" and rising to the occasion.

A Soul Search

It is not the lack of ideals that hindered our attainment but the lack of resolution and clarity of approach As early as 1815, Lord Moria deplored, "the sad effect of this education is that the inculcation of moral principles forms no part of it. The remedy for this is to furnish the village school master with little manuals of religious sentiments and ethic maxims conveyed in such a shape as may be attractive to the scholars." This was the first cry that was raised for a conscious effort towards instilling social, moral and spiritual values in a secular shape. Since then, especially after the attainment of independence and the adoption of the democratic, secular and socialistic constitution, many commissions and committees have made innumerable recommendations for the implementation of value education. Some of the reasons for the non-implementation of the recommendations in regard to values may be stated as follows:

Firstly, it is due to the complexity of the modern Indian society with a heterogenous population having diversities of religious beliefs and practices and the presence of young pupils of different castes, creeds, colours, economic status in the same public institutions.

Secondly, there has been a debate on the terminology leading to the postponement of the implementation of the recommendations of various commissions which ultimately resulted in the same set of recommendations coming from different commissions. A careful study reveals that, in so far as the recommendations are concerned, these have generally sounded the same note in most of the cases and have their relevance even today.

Thirdly, the usage of the terminology for the same set of values has been so varied that any attempt to analyse it involved more than 80 values. In the absence of a consensus on the explanations of the terms, it becomes even difficult to classify the values identified

Most important of all is that no effort is put to explain these values as explicit behavioural patterns. There has been a wide gap in the knowledge—as to how these values can be passed on to the students through different subjects and activities. This lack of suitable literature for establishing correlation between the values and the subjects and activities through which these can be cultivated and the absence of clear-cut definitions of these values in behavioural terms did not result in the development of an integrated programme for the cultivation of values.

Lastly, the lack of understanding regarding the structure of values and the proper methods of enabling the pupils to imbibe the desired values is also a major reason. This aspect of education should find its proper place in our programmes of teacher training.

The Ways and Means

After studying the problems in effective implementation of value education and after realizing the value of clear-cut approaches in it, we can turn to the documents of recommendations of various commissions regarding this aspect of education. Broadly three types of approaches have been suggested by various committees and commissions in dealing with the inculcation of values among students:

1. Suggestions
2. Participation/ Experience
3. Example

These also have been termed as direct and indirect methods. The following is a list of suggestions, mostly from the practical aspect discerned from various documents. It is prepared so that our practising teacher fraternity may find it useful in their daily interaction with their pupils.

Elementary Stage

1 The school assembly should be held for a few minutes in the morning for group singing. This develops in the children an ear for sweet sounds as well as a reverence for the unknown.

2 In the school programme two periods a week should be set aside for moral instruction. These can be utilized to relate the ethical teachings of great religions through interesting stories.

3. Simple and interesting stories about the lives and teachings of prophets, saints and religious leaders should be included in the teaching of languages and social studies. The ideals set in these stories and accounts need be related to the real life experiences of the students in the class and on the playgroud. Otherwise these abstract accounts do not have any relevance to the child who is in the pre-operational stage of his mental development.

4. All schemes of physical education and all forms of play should be organised compulsorily on group basis. This cultivates in the pupils all the desired democratic values.

5. During this stage of formative years the character of the teacher decides, to a large extent, the moral development of the pupils. The teacher should become an example for them. They have a great ability for imitation. This also needs to habituate them to the right emotions and induce in them the formation of good moral, mental and physical habits.

A word of caution can be set here. At this age children can develop the desired habits and values only in an atmosphere of love and security. For this the teacher must have a natural love and affection towards his pupils. Otherwise, all else will be of no avail.

Secondary Stage

1. The morning assembly should observe two

minutes' silence followed by relevant readings from the scriptures of the world, or group singing.

2. The essential teachings of world religions can be made a part of the curriculum in social studies and languages.

3. This stage of adolescence demands mental freedom. Every opportunity should be provided to the student to express himself. Every possible decision regarding their teaching and non-teaching programmes must be based on discussions with them. This makes them feel a sense of responsibility and the dignity of work.

4. Physical education programmes should be so organised to foster the values of healthy competition, graceful acceptance of defeat, a sense of fairplay and the much stressed group belongingness.

5 NCC and social service programmes, if organised well, bring about a consciousness of discipline and the much desired value of work as worship.

6. Every week a programme can be arranged to discuss a few of the issues raised by the students These issues may be related to religious beliefs, validity of norms and some of the outdated traditions. Experience has shown that this kind of discussion and teachers' appropriate conclusions have profound influence on the attitudes and value formations in the students The same method can be applied to daily life problem solving as far as possible.

7. At this stage students are prone to hero-worship. Naturally they are attracted by a teacher or the character of an ideal person. For this teachers have to set examples for the students.

8. Besides all these, participation in co-curricular and extra-curricular activities has sublimating influence on the students' emotions. Training for leisure is also essential at this level.

University Level

At this level the recommendations of the University Education Commission are very appropriate The Commission felt that ·

"If we exclude spiritual training in our institutions, we would be untrue to our whole historical development. The fundamental principles of our Constitution call for spiritual training. There is no state religion. Every one is at liberty to approach the unseen as it suits his capacity and inclination. This does not mean religion illiteracy. It is to be deeply spiritual and not narrowly religious. . What we need is not the imparting of instruction but transmission vitality. We must civilise the human heart. Education of the emotions and discipline of the 'will' are essential parts of a sound system of education Religious is a permeative influence, a quality of life, an elevation of purpose. For this our institutions should have simplicity and an atmosphere of consecration that permanently influences lives" The Commission had recommended .

1. All educational institutions start work with a few minutes of silent meditation.
2. In the first year of degree course, lives of great religious leaders like the Buddha, confucious, Zoroaster, Socrates, Jesus, Shankara, Ramanuja, Mohammad, Kabir, Nanak, Gandhi be taught.
3. In the second year, some selections of a universalist character from the scriptures of the world be studied.
4. In the third year the central problems of the philosophy of religions be considered.

This programme is not exclusively meant for humanities courses but for every faculty students

Synthetic Approach

From what we have seen in the above paragraphs, it demands that a synthetic approach be framed and that is also with a resolute will and substantial effort. This allround spiritual, moral and social development also requires co-ordination of home, school and society. In the opinion of the Secondary Education Commission the influence of home and the influence exercised by the public of the locality and the extent to which public opinion prevails in matters of religious or moral codes has a formative influence on the moral behaviour of the students.

On the role of school the Indian Education Commission felt : "The school atmosphere, the personality and behaviour of teachers, the facilities provided in the school, will have a large say in developing a sense of values. The consciousness of values must permeate the whole curriculum and programme of activities in the school. It is the duty of every teacher, whatever the subject he teaches, to ensure that fundamental values such as integrity and social responsibility be brought out. The teacher even need not try to draw out the underlying morals all the time, but if he has given a thought to the values underlying the scope of his subject, they will imperceptibly pass into the teachings and make an impact on the minds of the students. Moreover, a sense of purpose should inspire all school activities, and must be reflected in the life, tone and atmosphere of the school."

To conclude, this discussion is in no way comprehensive enough to be adopted by every practising teacher. They can find even more useful practices if they give a thought in this direction. And there is every need for the teachers to take this task of bringing about value-orientation in education as a challenge, and sustained and whole-hearted efforts be made towards this task.

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Resource Help for Children with Difficulties in Reading and Writing

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MOST children who are referred for resource help probably have difficulty in some aspect of reading There are a number of capacities and skills a person must possess and master in order to read visually presented material. Among these are visual acquity, motor control over eye movements, ability to discriminate among stimuli, and knowledge of the language Reading, a visual-auditory task, involves obtaining meaning from symbols (letters and words) It is a basic tool that serves an individual for a lifetime The ability to read permits a person to develop and maintain employable skills; participate in social, cultural, and political affairs; and fulfill emotional and religious needs. In addition, reading offers recreation and enjoyment (Kirk, Kliebhan and Lerner), 1978) According to Brabner (1969), most pupils who fail a grade do so because they cannot read well Reading failure adds to a pupil's frustration, feelings of inadequacy, and dissatisfaction with school (Haring and Bateman, 1977).

In almost every case a child's difficulty in reading has a cumulative effect and manifests problems throughout the language arts and other content areas. Poor reading is a stumbling block to further learning Children who are deficient in this skill should be given the attention necessary to remove the educational barriers that are created when one is unable to work independently, use printed materials, or pursue personal reading interests.

How does the resource teacher plan and execute effective educational programmes for individual children? This question is at the very heart of the entire resource effort. To plan and implement effective programmes for referred children, resource teachers will have to use successfully their assessment, teaching, and consulting skills in a dynamic, integrated, and ongoing fashion, this is good teaching.

Reading Disabilities and Basic Skills

It is possible that few children with mild reading disabilities are considered learning disabled. Factors related to reading disabilities can be organized into three areas : (a) physical, (b) environmental, and (c) psychological. Table 1 lists these factors and their various components. These factors do not cause reading problems.

TABLE 1
Factors Related to Reading Disabilities

Physical
- Neurological Dysfunction
- Cerebral Dominance and Laterality
- Visual Defects
- Auditory Defects
- Heredity and Genetics

Environmental
- Inadquate Teaching
- Cultural Differences
- Language Differences
- Emotional-Social Problems

Psychological
- Auditory Perception
- Visual Perception
- Language Disorders
- Selective Attention
- Memory
- Intelligence

Types of reading behaviours and specific reading errors are presented within the framework of reading habits, word recognition errors, comprehension errors and miscellaneous symptoms as given in Table 2.

TABLE 2
Characteristics of Children with Reading Disabilities

Reading Habits
- Tension Movement
- Insecurity
- Loses Place
- Lateral Head Movements
- Holds Material Close

Word Recognition Errors
- Omissions
- Insertions
- Substitutions
- Reversals
- Mispronunciations
- Transpositions
- Unknown Words
- Slow Choppy Reading

Comprehension Errors
- Cannot Recall Basic Facts
- Cannot Recall Sequence
- Cannot Recall Main Theme

Miscellaneous Symptoms
- Word-by-Word Reading
- Strained, High-pitched Voice
- Inadequate Phrasing

Teachers of pupils with reading disabilities need a perspective concerning the development of reading skills. Reading is often viewed in terms of stage development with each stage providing the foundations for the next one. Harris (1970) divides reading development into five stages which help toward understanding the reading process.

Stage 1	Reading Readiness
Stage 2	Initial Reading Acquisition
Stage 3	Reading Achievement
Stage 4	Expansion of Reading
Stage 5	Refinement of Reading

In their analysis of reading and reading difficulty, Wiener and Cromer (1967) pointed out that reading requires a sequence of skills which can be conceptualized in a hierarchical fashion, such that a problem encountered at any one level of this hierarchy will create difficulties at all subsequent higher levels. Comprehension is the ultimate goal of reading.

Selective Attention → Sequential Scanning → Discrimination → Decoding → Comprehension

The diagonosis of reading problems is presented in terms of norm-referenced tests, criterion-referenced tests, and informal tests. The Diagonstic Reading Inventory is stressed as a useful criterion-referenced instrument and informal reading inventories are highlighted as useful informal measures The possible reading methods and approaches could be : (a) Basal Reading, (b) Phonic, (c) Linguistic, (d) Alphabetic, (e) Language Experience, (f) Individualized Reading, (g) Programmed Reading, and (h) Specialized. All of these approaches are effective with some children some of the time and that no one approach is effective with all children all of the time. The resource teacher must constantly evaluate the attributes and weaknesses of the reading approaches for each child and select the most feasible approach based on assessment and clinical judgement.

Analysis of the Learner

Answers to the questions given below will give the resource teacher a broad perspective of the instructional practices of the classroom from which a child has been referred. These answers should be used to obtain clues for working on an individual basis with a referred child and also to determine what measures might be taken to involve that child in a more appropriate programme within the regular classroom.

1. What does the referral information look like and why ?
2. How is standardized test information reported and interpreted ?
3. What are the intended meanings of any special terminology used on the referral form ?
4. What additional information does the teacher provide about the instructional problem (s) ?
5. What influence might the referring teacher's impressions of the child or of the problem have on long-range instructional planning?
6. What methods and materials are used and have been used with the child ?
7. What specific language of reading instruction is used in the referred child's classroom?
8. Does the referred child have a sufficient grasp of the concepts that are necessary to deal with the instruction being attempted ?
9. What are the referred child's attitudes towards his/her reading abilities? Are these attitudes obvious ?
10. What does an analysis of independent work samples show ?
11. How do classroom grouping practices affect the referred child ?
12. How does the referred child behave during group reading ?
13. Will any of the classroom's assessment procedures limit the recommendations that can be made for the child ?
14. What other persons are involved in the child's reading instruction ?
15. How do the parents regard the child's reading abilities ?
16. What should the resource teacher note when children are referred because they are considered 'high risk' ?
17. What additional information should be considered for the older student who must read in the content areas ?

Supplemental Individual Analysis

Working on an individual basis with a referred child enables the resource teacher to :

1. observe any differences between group and one-to-one behaviours;
2. engage in analytic teaching;
3. determine what will reinforce appropriate reading behaviour;
4. obtain a deeper and broader understanding of how the child reaches the answers he/she chooses;
5. determine how the child views himself/herself and the referred problem; and
6. develop a major programme of remediation that will account for changes in both child and the environment in which reading instruction

is taught.

There are several major approaches to individual reading analysis. These assessment strategies include Individual Reading Inventory (IRI), Skill Retrieval Systems, Analysis Teaching, and Reading Miscue Analysis (RMI). Resource teachers should study the procedures, consider the controversies and select the techniques that most closely reflect their particular view of reading. The resource teacher who studies the children in the classroom and works with them individually should develop and test out instructional procedures while doing so.

Difficulties in Written Expression

Even though writing, reading and arithmetic are often called the three basics of elementary education, relatively few children of lower elementary age ae referred for resource help because of problems with written expression. The number of children referred for writing difficulties increases during the upper elementary and post-elementary years. Regardless of when the problem is identified, both regular and resource teachers tend to spend a lot of time evaluating and remediating the subskills of writing but devote little attention either to the quality of the ideas expressed or to how they are formulated.

The resource teachers who intend to work with children on their written expression should observe and evaluate more than just the activities that occur during writing class because written language is an integral part of most school work. Therefore, for resource teachers to have a comprehensive picture of a referred child's problem in writing, first they must determine the role that written expression has in the daily activities of the school. Then the resource teacher can study the child's performance in those activities.

Sequence of Written Expression

Writing is an essential skill for children to acquire while in school. Society demands that the adult be able to convey thoughts, needs, and personal information in written form. Written expression is one of the more difficult of the communication arts to master. The process of putting of one's thoughts into written form involves the integration of all the areas of the language arts: oral expression, reading, handwriting, spelling, vocabulary, and writing conventions (capitalization, punctuation, and organisation). Difficulty in any one of these areas reduces the degree to which the written product effectively communicates the message.

Written expression gradually develops as the child progresses through stages of development, self-expression and skill achievement. Table 3 shows the writing sequence which begins with initial writing experiences when children understand that language can be written down for others to read. Motivation increases along with

TABLE 3
Sequence of Written Expression

Initial Writing	Skill Development	Refinement
Motivation	Vocabulary	Proof-reading
Writing as Communication	Punctuation	Personal Style
Expressive Writing	Capitalization	
Transactional Writing	Organisation	
Poetic Writing	Spelling	
Writing can be Public or Private	Handwriting	

experience and a natural desire for clearer expression and better communication leads to skill development. The final stages in the sequence are achieved when children begin to refine their writing by first proofwriting for conventional errors and clarity and then developing a personal style.

Analysis of the Learner in the Class

The children should be taught written expression. A certain level of proficiency is writing ability is necessary : (a) to do well in many academic subjects , (b) for adequate social communication; (c) for success in many vocations; and (d) for the enjoyment derived from its creative or literary value. An overview of a broad, well-balanced curriculum in written expression can provide evidence that the teacher is considering all of these reasons for teaching writing. The following questions will help the resource teachers discern factors within the classroom that are likely to affect a child's written expression ability.

1. Is there evidence that written expression is being taught in the classroom as an integrated, multipurpose ability ?
2. What opportunities does the academic curriculm provide for the student to express his/her ideas in writing.
3. What kind of standards are expected and how are they taught ?
4. What provision is made for the student who is not yet able to write ?
5. What assistance is provided for written expression within the classroom ?

Supplemental Individual Analysis

The following questions will be of practical value for individual evaluation and programme planning in written expression.

1. Is the child's written expression really inadequate ?
2. To what extent does the referred student write ?
3. How mature is the child's written composition ?
4. How well does the student command the mechanics of written expression ?
5. What extraneous factors are involved in the student's perceived problems with written expression ?
6. Does the student have the readiness skills necessary for written expression appropriate to his/her stage of development ?

If the student's abilities in these areas have not been noted previously and if the student has a lot of trouble with written expression, then the resource teacher should set up situations in which he/she can systematically observe these factors.

Instructional Procedures

The following recommendations may help the resource teachers to develop instructional procedures for children with difficulties in written expression:

1. The resource teacher must create an environment that is conducive to writing. If such an environment is not provided within classrooms, the resource teacher may wish to set up a writing centre within the resource room itself.
2. The techniques of group story writing, dictation, and copying can be of value for the beginning writer. These early experiences, no matter at what chronological age they occur, should be accompanied by a rich variety of readiness experiences. Abundant experience in oral language expression is more important in the development of ability to write than the actual writing itself. Such experiences should be carefully planned, observed and interpreted back to the child.
3. Creating an audience for the products of

written expression provides motivation for original writing and also shows the need for rewriting. Newspapers, plays, literary magazines, and bookmaking are stimulating if the student knows that his/her work might be used.

4. Timed writing activities and applying a contingency management system that reinforces a higher rate of production also may be tried. Since slow rate may be related to the teacher's placing too high a value on standards, either self-imposed or school imposed, these areas also might require attention.

5 Thorndike's comments about the teaching of punctuation are still cogent today Thorndike suggested that punctuation does not begin with marks, but with the thoughts and feelings to be conveyed to or aroused within the readers.

6. Written expression is not the only expression. Writing may be so painful for a student that he/she does not communicate; and as a result, academic, social and emotional growth may suffer In this case, other means of expression should be encouraged and taught.

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Innovative Approaches to Population Education

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Education is a dynamic process and is a powerful medium for social change. During the last few deades, many new educational processes, as environmental education, sex education, moral education and family life education have come into existence Similarly, a new field of population education has been unveiled. The population explosion of developing countries like India focussed the attention of the people on population education At that time it was decided to introduce a subject of population education in school curricula. In the Regional Seminar on Population and Family Life Education, UNESCO, Bangkok (1970) population education was defined as an educational programme which provides for a study of the population situation in family, community, nation and the world, with the purpose of developing in the students rational and responsible attitudes and behaviour towards that situation. Dr V K. R. V. Rao has termed population education as a part of human resource development proramme. It should not be treated only as a quantitative phenomenon to control the population number and size. It has the qualitative aspects also, i.e. awareness about population problems, development of favourable attitude towards small family size through school and colleges, to have healthy individuals in the country

Necessity of Population Education at School Level

1. No doubt, people are the real wealth of a country, but if this increase of human wealth is more than the increase of economic development, it is a threat to the nation's socio-economic development. So there is a real need to inculcate the small family norms in the minds of the children, who will become parents tomorrow, and to provide factual information to them.
2. It is necessary to keep a balance between man and his environment Man has constructed roads, houses and factories on

fertile land He has brought population to air, water and soil. In 1921 India's population was 25 crore whereas in 1991 it has increased to 85 3 crore. If population will go on increasing at this rate, a time will come when one will not have place to stand upon earth. Therefore, it is essential to keep a balance in the eco-system, to check the pollution of the environment and to conserve the wealth of the country. Population education at school level can inspire the future citizens of India to keep a balance between nature and man and develop right attitude towards small family.

3. Human relations depend upon the economic, political and social situations in the country, which to a great extent depend on population. If population education becomes an integral part of the school curricula, the human relations can be more harmonious and will help the nation to achieve all-round development.
4. The students in high and senior secondary schools need to be taught the physiology of reproduction. It will not be difficult for them to understand the idea of the whole phenomenon of human reproduction through population education.
5. Population education will emphasize the proper registration of the births and deaths of the people. The students will come to know that birth control is not unnatural (as parents of many children think) and there are so many ways to check population growth.
6. This education will help the future parents to take responsible decisions concerning their own reproductive behaviour. This represents the moral and ethical purpose of education.

Innovative Approaches to Population Education

India is the first country in the world to have the national population policy and a programme to control population. A number of programmes and experiments are being conducted in population education in our ountry. These programmes indicate new innovative trends and approaches varying in contents, methods and clientele of population education

1. *Integrative vs Special Subject Approach*

In 1953, the National Family Planning Programme gave these two main approaches to incorporate population education in social programme.

In the Integrative Approach, the content of population education is integrated with the existing subject areas in school curriculum. The arguments in favour of this approach are: (a) Curriculum is over-crowded. So this subject matter should be integrated with existing subjects, (b) Children will probably learn better if they are confronted with relevant population material throughout the period of their schooling.

The supporters of the special subject approach emphasize it as a special subject in curriculum. They point out that if imparting of population education is so crucial to the welfare of the community, then why not it be given the status of a compulsory separate subject and the school programme be modified to make room for it.

2. *Broad Spectrum Approach*

Population education is not only sex education, nor family life education. But it is the integration of these two plus something more. Planning programme tackles the married couples who are in the reproductive age-groups. This helps them to develop healthy attitude towards family planning and to develop small family norms among people especially in the developing countries like India with limited resources. But population education will supplement the programme of family eduction. Sex education will help the pupils to develop rational attitude with regard to sex. It will be helpful for their own well-being and for the benefit of the society. But the area of population education is comprehensive than sex education, its spectrum being broad as it is helpful to individuals, to the society and to the nation at large.

3 *Theoretical vs Practical Approach*

Due to scientific, technological and medical advancement teachers can try out new ideas in teaching and learning. Various exhibitions, science film shows, lectures, libraries, laboratories, hobby corners, workshops and T.V. facilities are experimented in schools in order to impart theoretical and practical knowledge to the students.

Also, the students are made well acquainted with extensions works and researches carried out at the national and international level in the area of population education.

4 *Mass Media Approach*

The potentiality of mass media for population education is well known. Presently, radio and television provide some programmes which are particularly useful for the students. However, we have not obtained any good results of advertising population education slogans and family planning slogans from mass media, but it is expected that mass media would play a more significant role in population education in the coming years. Even now in villages the radio and TV are very common. With the launching of the Indian Communication Satellite and the availability of electronic equipments in many schools and training centres like DIETS, greater emphasis should be placed on the use of electronic media. Some schools have been provided with tape-recorders.

Film industry is other possibility to impart population education. Some films on family planning programme to popularise small family norms have been used in rural as well as urban areas.

5. *Linking Population Education with Family Planning Programme*

To overcome the often deep-rooted resistance to family planning, the programme should adopt the well-known IEC approach, which weighted heavily towards the use of the mass media and often over-simplified the complex issues relating to population. Generally, family planning programmes are directed to adults. So it was realized that the school is a better institution to make young minds understand the complexity of population-related issues. Family planning and population education are seen as the two responses in the field of health and family welfare.

6. *Linking Population Education with Informal and Non-formal Education*

The major effects of the country's growing educational needs and demands are reflected in the increasing recourse to out-of school education. To meet these growing requirements, the number of schools has increased manyfold.

But India is a poor country. There are many people who are economically and educationally backward. They do not send their children to the schools. But the programme of education is incomplete unless we approach the young generations of the society. Thus, it is a necessity that the population education programme should be integrated with non-formal and informal education like adult education, social education and correspondance education. The subject matter can be imparted to such people through mass media like radio, TV, films, dramas, folk songs, still pictures, etc. through social workers and religious leaders. From time to time these people can be invited to take part in various population education programmes.

Role of Schools in Imparting Population Education

As defined by educationists, the school is a social institution designed for specialized teaching of the young. The school has a permanent impact on the child. Therefore, to attain the aims of population education, it should be taught to all students of all classes In the school, the headmaster, the teachers and the students should be motivated to learn the subject matter of population education

No educational activity is successful, if the teacher has a passive role in the programme So, he should be fully conversant with its concepts and philosophy and he should have faith and conviction in it He should practise a few lessons in correlating the topics to the problems caused by population growth. Both inservice and pre-service educational programmes should be carried out. In the modified scheme of teacher training, the District Institutes of Education and Training (DIETS) and Colleges of Teacher Education (CTES) are expected to play a vital role Provision of various kinds of orientation programmes like extension lecturers, workshops, and seminars should be there like for the teachers.

Also, the teachers must have a capability to communicate with the parents of their students, to convince them and to develop favourable attitudes of their children learning population education in the schools.

Education is a dynamic process and new innovations are introduced in it. So, the teachers should be allowed and encouraged for making new researches and experiments in population education. They should be given good rewards for giving and writing new ideas and concepts.

The use of audio-visual aids can make their teaching effective. So they should be trained in presenting various aids during teaching. These aids can be charts, models, graphs, pictures, radio, films, exibitions, etc. Population education corners should be introduced in the school. Relevant topics of population education should be included in the syllabus and these should be taught with the help of different subjects. Since population education aims at attitude formation and value orientation, co-curricular activities can play a very important role in achieving these. So there should provision for various co-curricular activities like dramas, debates, film shows, displays, drawing and painting, essay competitions, visits to the slums in cities and family welfare centres.

Areas of Population Education and its Integration with School Curriculum

Jayasureia (1971) spelt out different areas in which there is a need for studying population education. These are as follows :

1 *Collection and Analysis of Population Data*
Demographic processes; growth rate, age structure and their consequences; determinants of population growth; trends of population growth.
2. *Population Growth and Human Development*
At the micro level of family; at the macro-level of nation.
3. *Problems of Urbanization*
Housing; transportation; unemployment and social tension.
4. *Family Life Education*
Family and its role; psychological aspects of human sexuality; reprodutive process.
5. Planning to cope with the problems of

urbanization and population growth.

Most of the State Departments of Education emphasise the integration of population education with the teaching of various subjects.The various subjects which can be helpful in promoting population education awareness among students are as below.

1. *Science*

   Through the subject of science, we can teach the students about food, preservation of life, psycholgical aspects of human sexuality, reproductive process, population problem, etc.

2. *Mathematics*

   Various concepts and measures of mathematics like average, percentage, budget, banking, insurance have direct bearing on demographic process, growth rate, age structures and their consequences, determinants of population growth and trends of population growth at the micro and macro levels of nation.

3. *Social Studies*

   The Social Studies syllabus is directly concerned with the problems of population which is an important social issue. In Civics a detailed discussion on family life, family size, health and happiness of members of family, problem of housing, unemployment, social tensions, traffic problems, food rationing, etc. is to be interpreted with population bias so that pupils are able to analyse and appreciate the impact of population on their day-to-day life.

   In History, the population effects could be interpreted in terms of the population poverty, exploitation and slavery leading to unplanned development of the country in every phase.

   In Geography, decay of indigenous industries, partition of India, deterioration of agricultural and industrial production, life in villages, towns and cities could be compared in terms of population problems facing the country.

4. *Language*

   Some lessons on prose and poetry should deal with the discussion of the problems of population growth, family planning, healthy and happy family life, poverty, causes of poverty and poor standard of living in different regions of the country

Role of School Libraries in Promoting Population Education

Library material can be helpful in promoting population education among students. First-hand information about the following subjects is necessary· Science, Mathematics, Social Studies, History, Civics, Geography, Fine Arts, Sociology, Literature, Psychology, Labour, National and World Affairs, Communication Media, Human Relations, Family Relations, Public Relations, Education Audio-visual Aids and Population Education Programme.

Expected Learning Outcomes

The following learning outcomes may be expected through population education :

- All-round development of a person and his family.
- Development of the right type of the concepts about the problems expected to be faced by the country in future.
- Proper use of human resources.
- Balance between man and environment.
- Development of harmonious human relations.
- Eradiction of social evils.
- Conviction in the democratic system.
- Development of feelings of moral

responsibility.

- Development of capacity to take decisions about the size of family
- Development of capacity to solve problems.
- Development of responsible parenhood

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Experiential Learning and Experiential Taxonomy : An Approach

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Experiential means an experience which is an actual "living through an event or events". The living through of an experience involves the total personality.

Learning occurs when pupil has an experience, that is when he reacts to the situation in which he finds himself. Hence learning experiences are the means to attain educational goals

Difference between Experiential and Classroom Learning

In general classroom learning, the steps of Information Assimilation Process are as follows :

1. Receiving information.
2. Assimilating and organizing information
3. Inferring a particular application.
4. Moving from the cognitive and symbolic processing sphere to the sphere of action

The experiential learning process proceeds in almost a reverse sequence. it does not use a symbolic medium for transmitting information. In experiential learning –

1. One carries out an action in a particular instance and sees the effects of that action.
2. Following the action and the observance of its effects, the second step is understanding these effects in a particular instance so that if exactly the same set of circumstances reappeared, one could anticipate what would follow from the action.
3. Understanding the general principle under which a particular instance falls. It implies the ability to see a connection between the actions and the effects over a range of circumstances.

Designing Experiential Learning

Several basic and crucial procedures are involved from the point of view of teaching in order to make learning more probable.

1. Presentation of information, in the form of a situation, a set of directions, or a special environmental condition.
2. Obtaining a response of some kind from the learner—it may be brief or lengthy, and it may be cognitive, behavioural, or affective
3. Giving the learner feedback concerning his response (i.e knowledge of results, or indication that he is "getting it right".

Stated in a "learner-centered" way, experiential learning requires :

1. the existence of a condition in which there is some discrepancy (some pattern of element that is different from the expected), which poses some problems;
2. an opportunity to interact with the environment, to deal with and manipulate the pattern, or elements, in order to produce a more orderly, accustomed, or expected pattern; and
3. the availability of feedback, and the ability to interpret feedback (including feedback which results from the learner's own intervention or responses).

Expanding the Taxonomy

The cognitive taxonomy by Bloom (1956), Englehart Hill (1963), Affective Taxonomy of Krathwohl, Bloom, Masain (1968), and Psychomotor Taxonomies of Simpson (1966), Harrow (1972) were used by planners and teachers. These taxonomies do not address whole of human experience. Each deals with only a particular aspect of the total interaction with an experience. A need was felt for a gestalt taxonomy to provide a framework for understanding, planning and evaluating the meaning of a total experience This gave birth to experiential taxonomy in 1975 by Steinaken N.W. and Bell R.M. The experiential taxomony is an approach to learning and teaching which needs to be tested and researched in the ensuing years as an effective tool for teacher training, for self-evaluation and for curriculum development.

Categories of Experiential Taxonomy

1.0 EXPOSURE : Consciousness of an experience This involves two levels of exposure and a readiness for further experience

1.1 *Sensory* . Through various sensory stimuli one is exposed to the possibility of an experience.

1.2 *Response* : Peripheral mental reaction to sensory stimuli. At this point, one rejects or accepts further interaction with experience.

1.3 *Readiness* : At this level one has accepted the experience and anticipates participation in it.

2.0 PARTICIPATION· The decision to become physically a part of an experience There are two levels of interaction within this category.

2.1 *Representation* ; Reproducing, mentally and/or physically, as existing mental image of the experience, that is through visualizing, role playing, or dramatic play. This can be done in two ways

- 2.1.1 *Covertly* : as *a private* personal "walk through" rehersal.
- 2.1 2 *Overtly*: in a small or large group or interaction, that is, in the classroom or playground

2.2 *Modification*· With the input of past personal activities, the experience develops and grows. As there is a personal input in the participation, one moves from role player to active participant.

3.0 IDENTIFICATION : The coming together of the learner and the idea (objective) in an emotional and intellectual context for the achievement of the objective.

3.1 *Reinforcement* : As the experience is modified and repeated, it is reinforced through a decision to identify with the experience.

3.2 *Emotional* : The participant becomes emotionally identified with the experience. It becomes "my experience".

3 3 *Personal* : The participant moves from an emotional identification to an intellectual commitment that involves a rational decision to identify.

3.4 *Sharing* : Once the process of identification is accomplished, the participant begins to share the experience as an important factor in his life. This kind of positive sharing continues into and through category 4.0 (Internalization).

4.0 INTERNALIZATION: The participant moves from identification to internalization, when the experience begins to affect the life style of the participant. There are two levels in this category.

4.1 *Expansion* : The experience enlarges into many aspects of the participant's life, changing attitudes and activities. When these changes become more than temporary, the participant moves to the next category.

4.2 *Intrinsic* : The experience characterizes the participant's life style more consistently than during the expansion level.

5.0 DISSEMINATION : The experience moves beyond internalization to the dissemination of the experience. It goes beyond the positive sharing that began at level 3.0 and involves two levels of activty.

5.1 *Informational* : The participant informs others about the experince and seeks to stimulate others to have an equivalent experience through descriptive and personalized sharing.

5.2 *Homilectic* : The participant sees the experience as imperative for others.

A Step-by-Step Plan for Total Experience

Design of Curriculum Development

1. Developing a rationale and goals for the unit.
2. Delineating major generalization and concepts implicit within the goal.
3. Listing unit objectives squentially and in behavioural terms.
4. Identifying pre-requisite learner skills needed initially and as the unit develops.
5. Placing activities for objectives achievment in sequential order.
6. Keying activities of the experiential taxonomy.
7. Identifying learning principles, pertinent to each objective.
8. Listing of expected learner behaviour.
9. Listing appropriate taxonomy strategies for each activity.
10. Listing evaluation and assessment techniques.
11. Citing necessary resources for activity and objective achievement.
12. Keying activities to taxonomic levels of creativity, of critical thinking and of problem solving.
13. Finalizing the curriculum package.

Learning Principles – A Taxonomic Organization

Exposure	*Participation*	*Identification*	*Internalization*	*Dissemination*
a) Extrinsic motivation	Initial guidance	Personal	Over-learning	Extrinsic transfer
b) Focussing	Meaning-exploration	Knowledge of results	Intrinsic transfer	Reward
c) Anxiety	Chance for success	Reinforcement	Differential input	Intrinsic motivation

Experiential Taxonomy, Creativity, Critical Thinking and Problem Solving

	Exposure	*Participation*	*Identification*	*Internalization*	*Dissemination*
Creativity	Motive to produce	Visualization of production	Experimenting with the idea	Completing a product	Admiring, showing, sharing
Critical thinking	Recognizing variable	Data collection and variable definition	Organizing-structuring	Generalizing	Using variable
Problem solving	Problem identification	Exploring data bases	Trying optional solutions	Selecting a particular solution	Implementing and influencing

A Taxonomic Role Model for Learners, Teachers and Evaluators

Taxonomic Level	*Learner*	*Teacher*	*Evaluator*
Exposure	Attender	Motivator	Observer
Participation	Explorer	Catalyst	Questioner
Identification	Experimenter	Moderator	Assessor
Internalization	Extender	Sustainer	Measurer
Dissemination	Influencer	Critiquor	Determiner

Conclusion

Experiential learning involves investment of the self of the learner leading to self-sufficiency and self-satisfaction.

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Political Mobilization of Teachers

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Political mobilization may be veiwed as a part of social mobilization relating to a particular period of time and needs. It is considered as differential commitment and support for groups of masses Through it the existing autonomous authority is activated and stirred to change its norms, values or structure. Mobilization is essentially (1) attitudinal commitment to action, and (2)a means of translating this commitment into action or observed behaviour (Nettle J. P. 1967).

Political behaviour is of vital importance in the process and phenomenon of political mobilization. By political behaviour, we should not only mean merely the behaviour of politicians. To be precise it, rather includes behavioural patterns of people as protagonists inside the working rules of democracy

Our social behaviour becomes political when there is a growing awareness of subjective competence in the assumption of responsibility in non-political social affairs. It may well apply to the' case of those teachers who on assuming certain responsible positions in the functioning of the university or college are found with a subjective and exaggerated notion of their competence.

Politics may unleash the forces of competitiveness whose purpose may be the acquisition of power for achieving certain goals. In doing so one may manipulate existing and emerging affiliations and linkages for consolidating one's position. In the process of politics what is important is the organization and accumulation of mass support in order to make politics mass-based (Singh Y. 1978).

Mobilization may be peripheral in origin, being directed against existing authority in the course of its development. Also mobilization may be structurally induced downwards, from an elite towards mass partcipation. It may apply to the functioning of teachers' bodies in the sense that a few selected influentials among them are no longer in a position to have a hold over teachers' affairs Contrary to it, the activities and affairs of teachers are being effectively handled, directed and guided by persons having a mass base.

Political mobilization, historically and empirically, is different from other forms of social mobilization by having a distinguishing characteristic of authority legitimation. When we view this phenomenon among teachers, we may come across such teachers' bodies and forums and office-bearers thereof whose authority gets somewhat legitimized and may become institutionalized face to face with the statutory university of college authority.

We may consider political mobilization of teachers in the context of four basic components of social hierarchy: roles (referring to social obligations), collectivities (mobs), norms (referring to operative social norms which are sanctioned), values (conception or standard to compare and evaluate things). The process of mobilization of teachers, in the political sense, may generate change in respect of obligations to their positions, that-is, rules. Also, it may provoke them to convert into a mob, rallying round a common point. When the actions of teachers thus mobilized get combined with norms, it may amount to a political action. Further, if the action and behaviour of teachers thus mobilized gets coupled with values, it may amount to a political agitation followed by a revolution, that is, a mobilized teaching community at-arms.

Viewing in the sense of mobilization of politicians wherein a political party in a political system has an allegiance or affiliation to a central political authority, teachers' groups or bodies or such other collectivities may have an allegiance to some central authority as enshrined in the constitution or memorandum of such organisation of teachers. They are often guided and directed by the decisions taken at the level of their association or professional organization.

It is also a matter of common observation these days on the educational campuses that internal politics at the departmental or faculty level cannot be easily ruled out Similarly, there may be some teacher groups acting as pressure groups who are in league with the top bosses of political parties. Also, they are found giving electoral or some other support to different party candidates at the time of election in the hope of getting protection of their interest later on Also, some teachers or their collectivities may actively be influenced by the ideologies of political parties to the extent that sometimes they themselves get elected to legislatures or other local bodies

To sum up, these may be the indicators of political mobilization of teachers demonstrating their political action and behaviour However, it may deserve particular mention that all these possibilities and tendencies have not received any notice in our study while focussing our attention on political mobilization of teachers

We framed some questions and statements in our study conducted on 200 male teachers of degree and post graduate colleges affiliated to Rohilkhand University, Bareilly, in order to collect the required and revelant data. The question posed was: Do you think that teachers are taking more interest in non-academic things ? The relevant data thus gathered are tabulated in Table 1.

TABLE 1

Statement	Reactions					
	Strongly Support	Support	Undecided	Oppose	Strongly Oppose	Total
Teachers are taking more interest in non-academic things	16 8%	113 56.5%	30 15%	33 16.5%	8 4%	200 100

TABLE 2

Statement	Reactions					
	Strongly Approve	Approve	Uncertain	Disapprove	Strongly Disapprove	Total
Academic freedom is threatened due to politics in educational institutions	50 25%	110 55%	27 13.5%	13 6.5%	0 0	200 100

Table 1 shows that 64.5 per cent of the respondents agreed with the view that teachers were taking more interest in non-academic affairs, 20.5 per cent disagreed and 15 per cent remained undecided. Hence it may be generalized in a broad sense that the activities of teachers on the campus are drifting away and they tend to get gradually exposed to politics from within or without.

In response to the question whether academic freedom was threatened due to politics in educational institutions, the data collected are given in Table 2

It is clear from the above table that majority of the respondents, i.e. 80 per cent approved the statement, 6.5 per cent were against it and 13.5 per cent of them did not reply.

It may be concluded that academic institutions tend to loose their freedom and autonomy against the forces of external politics.

When asked further whether they thought it was the primary duty of a teacher to support teachers' movement, the majority of them (70.5 per cent) supported the statement, while 15.5 per cent opposed it and 14 per cent did not reply. The relevant data are given in Table 3.

It may be broadly generalized here that the idea of teachers' movement is getting momentum, pointing to their drifting towards political mobilization.

In reply to the next question where they considered college teachers serving as an instrument for political ascendency at the hands of political parties, 57.5 per cent of the respondents agreed with the view, 29 per cent disagreed and the remaining, 13.5 per cent kept silent.

It may be concluded that on occasions some

TABLE 3

Statement	Reactions					
	Strongly Support	Support	Uncertain	Oppose	Strongly Oppose	Total
It is the primary duty of a teacher to support teachers' movement	30 15%	111 55.5%	28 14%	25 12.5%	6 3%	200 100

TABLE 4

Statement	Reactions					
	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Total
College teachers serve as an instrument for political ascendency	14	101	27	45	13	200
		7%	50.5%	13.5%	22.5%	6.5%

TABLE 5

Statement	Reactions					
	Strongly Support	Support	Uncertain	Oppose	Strongly Oppose	Total
There should be reservation of seats for teachers both in assemblies and parliament	24	142	9	12	13%	200
	12%	71%	4.5%	6%	6.5%	100

students bodies or organizations allow themselves to be made use of for political considerations. And if left unchecked, it may result in their politicization in the long run.

The researcher had knowledge of some college teachers involving themselves in active politics and also who got elected to state assemblies and parliament. Taking a cue from it, it was thought of interest to gather their views about whether they supported the idea of reservation of seats for them in parliament. While 83 per cent of them responded positively, 4.5 per cent did not reply at all. The data are tabulated in Table 5.

The point hardly needs to be elaborated that teachers tend to be politically conscious more or less like other professional funtionaries In this context they also express their strong feeling that they should have due representation and participation in the formulation of educational policies and programmes and in working out modalities for their implementation

There is much debate and discussion these days on the question of autonomy of educational institutions. Teachers' organizations are getting vociferous about this issue and are all out for mobilizing public opinion for the same They are found vehemently opposed to any interference from outside in this sphere.

To the question whether educational institutions should have autonomy with no political interference 80.5 per cent respondents were positive in their response, 7 per cent opposed it, and the remaining 12.5 per cent did not reply The relevant data are given in Table 6

The trend that emerges from the table makes it absolutely clear that educational institutions should be autonomous and free from political interference

As political forces and influences have sweeping impact these days in different spheres of human activity, our universities and colleges are also not immune from it. It raises a doubt if there is any problem of malfunctioning of, or anomalous conditions prevailing in, colleges or universities on this account. Hence the question posed was whether educational institutions were functioning

TABLE 6

Statement	Reactions					
	Strongly Approve	Approve	Uncertain	Disapprove	Strongly Disapprove	Total
Educational institutions should have autonomy with no political interference	48	113	25	11	3	200
	24%	56.5%	12.5%	5.5%	1.5%	100

TABLE 7

Statement	Reactions					
	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
Are educational institutions functioning effectively?	32	74	35	6	53	200
	16%	37%	17 5%	3%	26.5%	100

effectively. An analysis of the data given in Table 7 shows that 29 5 per cent of the respondents disagreed, 53 per cent agreed and the remaining 17.5 per cent did not reply. It may be summed up from the analysis that all is not well with the health of the colleges as external influences seem to have started eroding the smooth functioning of academic institutions.

It is generally agreed that the standard of higher education is wholly dependent upon the worth of the teachers. If the quality of education is to be improved, we must realise the importance of the quality of teachers Our policies of education and programmes of action should, therefore, lay stress upon the overall development of the teachers. The majority of respondents (80 per cent) also stated that properly motivated teachers alone could give a new dimension to the educational scene

TABLE 8

Statement	Reactions					
	Extremely Right	Mildly	Uncertain	Wrong	Extremely Wrong	Total
It is right that properly motivated teachers alone can give a new dimension to the educational scene	109	51	12	27	1	200
	54 5%	25.5%	6%	13 5%	5%	100

TABLE 9

Attitude	Respondents	
	No.	Per Cent
Political identity	53	26.5%
Symbol of teachers' unity	80	40%
Necessity for survival	25	12 5%
Support to meeting demands	12	06%
Means to protect democratic rights	30	15%
Total	200	100

To probe into the phenomenon, the researcher further tried to gather reactions of the respondents as to what they felt about a teacher-politician in their midst Paradoxial though it may seem, the data as a given in Table 9 reflect the majority opinion (40 per cent) in favour of teacher-politician as a symbol of teacher unity. On the other hand, 26.5 per cent were found viewing it as a political identity. Thus the idea of teachers being a political identity has started catching on in recent times.

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Book Reviews

Educational Technology

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Yeole, Kolhapur, 1991, pp. 133, Rs 50.00

DIFFERENT disciplines have made significant progress with the advancement of science and technology. But adoption of technology in teaching methods is not given much importance as it is misinterpreted as mechanical approach But teaching can be made more effective by using educational technology. It is sensible to train pupil teachers in the new technologies of teaching so that teacher can meet the future challenges. This book is, thus, written with a futuristic outlook.

The book under review aims at bridging the gap between conventional approaches and technologies in teaching and learning process. The author defines the new role of the teacher in this world of technology, the teacher has a pivotal role in designing the learning systems for students, and in deciding the alternatives for teaching like video, television or computer, etc. These equipment and aids cannot replace or even undermine the role of the teacher.

The first three chapters of the book deal with the importance of educational technology in effective communication, classification of educational media and different types of instructional techniques used. The remaining chapters deal with the utility and necessary information of instructional techniques such as educational television, language laboratory, programmed learning, micro teaching and computer technology.

The author argues that educational technology is not going to replace the teacher but adds a new managerial role to face the challenging tasks ahead of him/her. The book then deals with a brief historical background of educational technology in India and the financial support given by the Ministry of Education, programmes undertaken by various organisations for the propagation of educational technology. The teaching-learning process can be effective only when the communication gap is less. The teacher should know the factors leading to the communication gap and how technology can reduce such a gap. The communication barriers are verbalism, referent confusion, day dreaming, limited perception and actual physical discomfort. The teacher should also know new education communication materials such as programmed learning, educational television, language laboratory and inter-related use of graphic models, specimens, etc. If the teacher learns and adopts these techniques, the rate of dropouts may come down.

The principles of learning are closely related to audio-visual communication and Edger cone of experience, which explain the interrelationship between audio-visual materials and the position of each audio-visual material in the process of learning. The author deals with different educational media that are used for instructional purpose. Instructional materials are classified on the basis of these educational media such as projected, audio, audio-visual media. Application of systems approach to the teaching-learning process is discussed with the help of a flow chart of instructional programme A model for systematic planning of instruction is developed to interpret the systems approach while selecting and using technology in the teaching-learning process.

The author briefly discusses new techniques such as educational television, language laboratory, programmed learning, micro-teaching and computer technology. Proforma is given for writing television scripts for schools which helps in direct teaching. Five importamt guidelines for the organisation of television in classrooms are discussed. Educational television programmes aim at instructional functions such as information, classification, motivation and demonstration. Language laboratory is used to communicate ideas effectively. The book discusses about this as well as four new types of language.

The meaning and five principles of programmed learning are also given. Distinct styles of programmes such as linear, branching and computer-based adaptive programmes and their uses are discussed along with the phases of programme writing, steps involved in each phase. Guidelines for evaluating a programmed instruction are also mentioned

Micro-teaching technique is important for pupil teachers to develop the main components of teaching such as knowledge, attitude and teaching competency. The reasons for using micro-teaching techniques as recognised by Allen and different teaching skills identified by Stanford University, Passi and common general teaching skills such as questioning skill, stimulus variation, blackboard work, etc. are listed. The techniques of macro-teaching are systematially represented in the flow chart, based on the principles and steps of micro-teaching. Micro-teaching is compared with conventional teaching.

The use of computer technology in the field of education is discussed with a brief historical background of computers, growth of computer technology till 5th generation, three main types of computer, three distinct units, special keys which are needed to be mastered and their functions. Unlike other techniques, computers can also be used for administration and instructional purpose. Emphasis is laid on computer-assisted learning. Objectives, types, functions and packages of computer-assisted learning are given.

One fails to understand why other techniques of teaching are not discussed in the book. For instance, team teaching is useful in the utilisation of the available resources; teachers, students and other school personnel can pool their resources and work together in a co-operative manner And to encourage creativity among children, Brain storming is a good tool. Discussion on these topics would have been useful to the pupil teacher.

This book is very helpful for pupil teachers as it gives an idea of different instuctional techniques. Using this information, a teacher can adopt different instructional techniques based on the availability of resources and instructional objectives This book helps a teacher to improve his/her teaching competence by developing different skills and also by using a relevant instructional technique.

K AINITHA

Higher Education in India

C.P.S. Chauhan

Ashish Publishing House, New Delhi, 1990, pp. 216, Rs 200 00

INDIA is a vast country spread over about 329 million hectares of land which is about 2.4 per cent of the total land of the world. Within her limited resources, India provides shelter to about 800 million human beings which constitute 16 per cent of the total population of the world. This means that one-seventh of the entire humanity are Indians. If we compare ourselves with some developed countries, the situation appears to be fascinating. The population of India is 5/2 times the population of the U.S.A. and her area is 2/5 times the area of that country. Similarly, Australia occupies three times as large an area as India and provides support only to 13 million people, the population which India adds every year to her teeming millions. This provides an indication of how severe are the problems of socio-economic and educational development of India as compared to other countries.

India has unique characteristics of having the third largest system of higher education and of the lowest per capita income in the world. The problems of universities in India differ from advanced industrial countries. The educational heritage of colonialism is very crucial in many developing countries. India is no more exception to it. Educational institutions, including universities, were established by colonial powers in their dependencies to provide trained civil servants. During the colonial period, education was controlled largely by the metropolitan power, and policy was made to meet colonial needs.

Education has been one of the key factors in economic and social development, indeed as the door to "modernization". As a result, the educational system has expanded very rapidly. Higher education in India which is essentially founded on Macaulay's idea, has achieved a tremendous quantitative growth during the period of over 130 years since the inception of Calcutta, Bombay and Madras universities in 1857.

In this book the author has tried to evaluate the development of higher education through elevan chapters. The major discussion is on the post-independence development A comprehensive summary of the pre-independence scenario of higher education is given in the first chapter while the second and third chapters are devoted to the description of quantitative expansion in terms of institutions and enrolment during the period 1951-56, and corresponding increase in financial inputs. Promotion of "quality" and "Social Justice" as a function of higher education has been examined in the fourth chapter which presents a critical analysis of higher education among women, scheduled castes, scheduled tribes and minorities. A brief account of regional imbalances is also given. The fifth chapter analyses the results of various examinations in order to assess the internal efficiency of higher education. The nexus between education and employment and other related issues has been examined in the sixth chapter Problems and working conditions of teachers are discussed in the seventh chapter along with some other related issues The emergence and growth of open learning system is the theme of the the eighth chapter. The ninth and tenth chapters have highlighted how politics, inside and outside the campus, has caused a serious damage to academic standards and overall corporate life in the universities. The eleventh chapter outlines the proposals and plans of the National Policy of Education, 1986 regarding future development of higher education in India. The author has systematically and clearly presented the matter. Though there are certain statements and remarks which may not be found pleasant to some fellow professionals, it is hoped that "bitterness of the truth" will generate more "light" than "heat" in our minds and initiate objective thinking

R D. SHARMA

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JIE *invites articles/papers on the impact of educational research on classroom practices and policy decisions. Specific examples where this impact is apparent may be given.*

GENERAL EDITOR

What should Constitute the Framework of Science Education?

(DR) V SUDHAKAR
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and
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THE present scheme of science education has been absolutely unconducive for the inculcation in the student of those values and qualities of mind the exemplification of which has made science one of the most fascinating human enterprises. Critical spirit and creative imagination constitute two of those essential features of science as a cognitive activity It is more and more felt today that science education promotes everything but not these two values. The abysmal failure of science education should be traced to the very approach it has towards science as a cognitive system. According to this approach, science is nothing more than a repository of certain formulae describing certain regularities in nature, supported by certain experimental evidences and expressed in mathematical terms So, all that a student is supposed to know is a catalogue of the formulae and the laboratory and quantitative techniques that go with them. The results of such an approach are all too apparent and disturbing. Hence the search for an alternative scheme of science education Unfortunately, the thinking in the direction of the alternative has not paid much dividends Among many reasons for this setback are the lack of clarity over the terms of such an alternative. The new thinking in science education in its enthusiasm for what type of elements should enter into the framework of science education has entirely overlooked the question of what should constitute the framework itself. The implicit belief is that the framework must be informed by our ideal of a successful scientific practitioner. In actual practice, such an ideal becomes couched in pragmatic terms of immediate success thereby throwing back the whole attempt within the bounds of the status quo Undoubtedly, the pragmatic considerations are extremely tempting and may even be indispensable. However, a purely pragmatic approach is always self-defeating in the sense that the more pragmatic we become in our attitude, the less we succeed pragmatically. Nowhere this is true as in science education. Any attempt to go beyond the pragmatic considerations, that is, considerations of short-term success, is dubbed as romantic and anti-thetical to the professional character of scientific discipline. Such an attitude is based upon a wrong understanding of the nature of science. The prevailing view construes that science is essentially a product and therefore it overlooks the fact that science is also a process – a learning process. The prevailing view overlooks the fact that science education is a part of the overall framework of liberal education A part fulfils its role as a part only if it promotes the cause of the whole. Hence, science education must be so construed that it promotes the central aim of liberal education, which is one of the pillars of modern civilization Therefore, in figuring out an adequate orientation of science education, one must, while taking into consideration the demands made by scientific professionalism, go beyond it. In other words, what have crippled the framework of contemporary science education and also much of our thinking upon possible alternatives are, on the one hand, the failure to recognise science as a primarily a process and secondarily a product and the failure to grasp the complex texture of scientific discoveries and, on the other hand, the failure to view science education as a part and parcel of the framework of liberal education as a whole. It follows logically that an adequate construal of science education must be rooted in, and informed by, the idea of science as a cognitive process and not as a catalogue of recipes and the idea that the fulfilment of science education lies in its contribution towards realising those values which lie at the heart of our scheme of liberal education. There is an immediate need to outline such a construal of science education in whose scheme science learning is shaped by science as learning and also which portrays and seeks to inculcate in students by that very act of portraying the two values that constitute the core of science as a cognitive enterprise and the ideals of liberal education, namely, critical thinking and creative imagination

Science as Product vs Science as Process

It may be noted that the idea of science as a product is traceable to, and received legitimation from, the positivist philosophy of science. According to this philosophy, science is nothing more than a related set of propositions, hierarchically organised in terms of generality and specifiable as corresponding to a set of observation statements The task of philosophy of science, positivism maintains, is to lay bare the logical structure of the propositional inter-relations as well as the relation between the theoretical propositions and corresponding observational statements. In the process of such a construal of science and philosophy of science it implied a static view of science. It is not that positivism denied the dynamics of scientific knowledge, but it definitely denied the relevance of scientific dynamics for an adequate understanding of science However, positivists did provide a view of scientific dynamics in terms of accumulation of observations and cumulative growth of the theoretical superstructure. Since, on such a picture, observation in order to be pure, demands a total non-interference on the part of the human subject and since the formulation of theory is construed in terms of an almost mechanical application of the logic of induction, the picture of science that emerged did not have any room for the idea of either critical thinking or of creative imagination. In other words, it was a passive picture of science Thus, the static conception of science that obtains from the idea of science as a product and the passive picture of science that accrues thereby are the hallmarks of positivist philosophy of science and the philosophy of science education that dominates the scene today.

The successful challenge to positivism has drawn the carpet of justification from under the feet of such a static and passive Conception of science. The tendency today is to make room for the idea of science as a process. In the parlance of science education, such an approach is called teaching science as an, inquiry. As Michael Martin points out, it "is an approach to teaching science which emphasizes the way in which science arrives at its findings rather than the findings themselves" (Martin, 1972). Apart from the fact that such an idea replaces the static and passive notion of science by a dynamic and active one, it is more inclusive than its rival. That is to say, the study of science as a process can take into account the product-dimension of science, whereas the product-oriented understanding of science does not make room for the process-dimension of science. Secondly, such an approach enables the student "to view science in a particular way, that they should see scientific findings as tentative, flexible – not God-given, but subject to revision and reformulation This way of viewing science is in contrast with what is alleged to be the traditional way of viewing science, in which scientific findings are taken for granted, considered to be unchanging and eternal" (Martin,1972) Thirdly, the process approach goes atleast someway in avoiding what Gruber calls, the error of psychological oversimplification. As he says, "Through prolonged effort, the *product* appears in public as a miracle of simplicity, coherence, and compression But the *process* by which this result is achieved, far from displaying these same attributes, is complex, many-sided, sometimes incoherent, and often greatly extended in time" (Gruber,1980). Yet another advantage of the process approach is obvious. "Science teachers influence future scientists, it is important for them to know how science proceeds for maximum growth. For, unless they have such knowledge, they will be unable to instill in their students research habits that will ensure maximum scientific growth Of course, not all science students are future scientists. Does the study of theories of scientific growth have relevance to the teacher of these students? It might in that such a study might suggest approaches to teaching that help to maximise the *science student's* (rather than science's) growth" (Martin, 1976). But all these advantages accrue only if one is clear about what we mean or what we ought to mean by science as a process. That is to say, one has to be very clear about the nature of scientific inquiry in order to realise the benefits that would accrue from teaching of science as inquiry

Bearing of Scientific Discovery on Science Education

Scientific frame of mind consists in a certain mode of thinking and type of response to certain problems In order to develop these qualities and attitudes, one has to imbibe and internalise the dynamics of the method of science But the vital question is what is that pattern of thought, if at all it exists, that lies behind the discoveries of science? The answer to this question has something substantial to contribute to our knowledge of scientific method and, therefore, to science training and to the philosophy of science education.

However, much of our idea of science education has been extremely poor. Though it is accepted by one and all that an adequate science education must provide not merely technical know-how in terms of laboratory methods and mathematical calculations and even information concerning scientific theories It must provide the student:

(a) a mode of thinking that is characteristic of scientific theorizing, and also

(b) the mode of thinking thus science shares with other reflective and creative thinking as say, in arts

Unfortunately this has not been achieved The reason is that we are not at all clear about the mode of thinking that is involved in science. This is because the dominant view (Carnap, 1962; Braithwaite, 1955; Reichenbach, 1938) of science is too poor to grasp the complex texture of scientific theories. The negative attitude towards discovery is the central thesis of the dominant view. This negative attitude evidences the poverty of the dominant view Because of the dominant view, we have not been able to develop an adequate psychological understanding of scientific discovery. The inductivist view naively thinks that scientific thinking means only more and more careful observation whereas the Popperian view (Popper,1959) considers scientific theorizing to be only an attempt at falsification. Karl Popper's idea that scientific thinking is a systematic way of learning from mistakes is wrong because in science we learn more from successes than mistakes. Popper's (Popper, 1962) enthusiasm for *critical* thinking proves detrimental to an appreciation of the positive character of our learning process (what to do and how to do and not simply what not to do and how not to do) Therefore, a proper understanding of scientific discovery will enable us to develop a proper understanding of the psychology of scientific theorizing.

It may be that N.R Hanson (Hanson, 1958) has not extricated himself totally from the traditional biases in philosophy of science like discovery-justification dichotomy. Also it may be that Hanson's (Hanson, 1960) picture of discovery process is not only wrong but even misleading. The fact that the current work on discovery has taken a direction different from the one taken by Hanson shows that Hanson's (Hanson, 1963) contribution does not lie in giving an adequate theory of discovery It lies in Hanson's success in showing how a serious study of discovery will enable us to go a long way in understanding the central features of the mode of thinking we consider scientific. Hanson (Hanson, 1958) shows how patternizing is central to scientific thinking. Scientific thinking may be more than mere patternizing. But definitely it involves patternizing, may be of a type not understood by Hanson. The recognition of the centrality of patternizing in scientific theorizing will enable us to realise what mode of thinking we must inculcate in the minds of science students and also how to enable them to see the relation between science and other domains of human creative endeavour such as art

A wholesome idea of science education must relate science to other creative endeavours, in general, and art, in particular It must set at naught the reality of 'Two Cultures' which looms large on our intellectual ethos, so well recognized by C.P. Snow (Snow, 1965) This can be done only by highlighting the aesthetic element in science and underpin it as the common basis for both Science and Art This, in turn, can be done by emphasising the role of patternizing in both Art and Science Patternizing is very obvious in Art. It can be made obvious in Science too by bringing to surface the texture of the discovery process.

It is more and more felt that science education must get related to day-to-day experience of human life. If this demand is to be construed as something more than tracing the technological gadgets to the scientific ideas whose application brought them into existence, the demand should be taken as one of the relating scientific thoughts to our cognitive activities in day-to-day life That is to say, a fruitful relationship between scientific thought and day-to-day life can be established by highlighting the parallels between that aspect of scientific thought we call 'discovery' and discovery in day-to-day life. Ludwig Wittgenstein brings out this point explicitly when he says "Making a discovery in a scientific investigation (say in experimental physics) is of course not the same thing as making a discovery in ordinary life outside the laboratory, but the two are *similar* and a comparison with the former can throw light on the latter" (Wittgenstein, 1974). One of the readily available ways of doing it is by stressing upon the fact that a discovery is essentially a problem-solving activity and that the context of discovery is constituted by a problem among other things. The exclusive emphasis on justification at the cost of discovery has resulted in the view that theories are essentially interpreted logical structures providing explanans from which we deduce experimental laws as explanandum This view overlooks the brute fact that theories are fundamentally attempted solutions to certain specific problems without which they make no sense. Not only a theory but even, as Koyre says, "Experimentation is the methodical interrogation of nature, an interrogation which presupposes and implies a language in which to formulate the questions, and a dictionary which enables us to read and to interpret the answers" (Koyre, 1968). In case of ordinary perceptual knowledge the similar point is brought out in the purposive character of perceptual knowledge claims, which makes them, to use the words of Bar-Hillel (Bar-Hillel, 1963), indexical or indexical declarative such that the motives behind them are dominated by 'pragmatic interest. It is by overlooking this pragmatic aspect that attempts were made to reduce our perceptual claims to sense-data However, the pragmatic dimension is something which is common to both scientific knowledge claims, called theories, and ordinary perceptual claims and it can act as a point of mediation between them.

What has been said above shows the need for a mode of making philosophy of science a part of science education itself rather than an abstract appendage to it. This makes science education philosophically sensitive and philosophy of science pedagogically consequential

It is hoped that any study based upon the vast and growing literature on scientific discovery will have some bearing on an adequate construal of not only science education in the formal sense of the term but also in the informal sense, i.e. in the task of making science part of our public ethos, in shaping the role of science in increasing the mental horizons of the layman who stands outside the pale of formal science education.

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Towards Enhancing Quality of Primary Education : Minimum Levels of Learning Approach

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UNIVERSALIZATION of Elementary Education (UEE) has been one of the top priority programmes of the Government of India for over four decades. Realization of this goal obviously calls for three things, namely, universal access, universal participation and universal achievement. Access refers to making schools more easily accessible to a larger section of the children and that too within the walkable distance. Participation refers to enrollment and retention of children, with enrollment referring to registration and retention to completing schooling up to the age of fourteen. Universal achievement, however, refers to achievement of satisfactory quality of education Concerns for all these have been highlighted through various reports and policy statements. Government of India took serious note of the recommendations made in these reports and took up the task of UEE on a massive scale. Consequently, there has been a tremendous expansion of schools in the country. The annual report of the Department of Education, MHRD, 1991-92 indicates that there were as many as 6.94 lakh elementary schools as on 1989-90. Of them, as many as 5.50 lakh were primary schools. This expansion has largely achieved one of the goals of the UEE and, that is, that now most of the children do have access to primary schools within the walkable distance As regards the participation of the children, the figures shown in the annual report indicate that as many as 97.3 million children got enrolled in grade one to five and 32 1 million got enrolled in grade sixth to eight as on 1989-90 As against the enrollment of children in the year 1950-51, these figures are more than five times in case of primary schools and more than ten times in case of middle schools. It does indicate that there has been a substantial rise in the enrollment of children in the schools, though there are some who have otherwise feelings about these statistics. Retention of children, however, still remains a serious problem before us. Besides, another important aspect of UEE which has not made much headway is universal achievement Measures of children performance continue to reflect not only low levels of achievement but also achievement gaps amongst the children. These levels of achievement and achievement gaps which vary from school to school made it crystal clear that educational opportunity in terms of infrastructural facilities alone is not good enough to do the job. What is more important is the laying down of standards of learning (quality) which must be ensured to be achieved by all the children (equity) This brings in the idea of "equity coupled with quality" which signifies that each and every child should have access to education of a comparable standard. In fact this idea of equity coupled with quality has necessitated the laying down of "Minimum levels of Learning" at primary stage

Historical Perspective

Prior to the finalization of National Policy on Education (NPE), 1986 document, a large number of state/national seminars were organized with a view to generating consensus opinion on certain vital issues. One of the significant recommendations which emerged out of those deliberations was that the "Minimum Levels of Learning" for different stages of school education be delineated. As a result of this, the NPE, 1986 gave a clear policy directive for laying down "Minimum Levels of Learning" for each stage of school education to ensure quality education for all learners In pursuance of this directive, the Ministry of Human Resource Development (MHRD), Department of Education, set up a Committee in the year 1990 This Committee laid down "Minimum Levels of Learning (MLL)" in three curricular areas of language, mathematics and environmental studies from grade one to five The Committee has also laid down a few possible learning outcomes in the affective domain. At the instance of the MHRD, the report of the Committee entitled "Minimum Levels of Learning at Primary Stage" has been printed and published by the NCERT in February, 1991.

The idea of "Minimum Levels of Learning" has been there since ages in one form or the other. The Education Commission (1964-66) categorically stressed upon the need for ensuring standards in education and recommended that standards be laid down for each grade and that schools be made to adhere to these standards. Further, a report on primary education reform was submitted by Ratnaike in 1978 in which he suggested that a 'minimum learning continuum' based on the most essential competencies be developed so as to form a common base for all learners (NCERT,1979). As a sequel to this, a document entitled "Minimum Learning Continuum" was brought out by the NCERT in 1979 with the help of state functionaries detailing out terminal competencies expected to be achieved by most of the children from grade one to five. This project was evaluated in 1984 and its results along with the guidelines of the National Policy on Education (NPE), 1986 were used to bring out another document entitled 'Minimum Levels of Learning at the Primary Stage", in the year 1991.

What Does MLL Mean?

The concept of "Minimum Levels of Learning" includes three aspects, namely, 'Minimum', 'Levels' and 'Learning. Of them, minimum and levels are two qualifiers of learning. The word 'learning' means desirable and durable change in learner's behaviour. In educational context this learning takes place through curricular experiences organized in or outside school premises. The word 'levels' refers to standards or levels of performance. In fact, each level consists of a statement of competencies and every competency requires a particular learning which in turn becomes levels of learning Learning may, therefore, have different levels, like advanced level, intermediate level or initial level For example, reading skill has got different levels which start from the ability to recognize the print with the symbols, combine those symbols together to pronounce a word followed by the fluency. It is only after these stages that one can comprehend and interpret simple meanings This may also be interpreted as reading the lines, reading between the lines and reading beyond the lines. When we measure these different levels of learning in terms of scores, it provides levels of performance The word 'minimum' refers to quantum of competencies which ought to be acquired by each and every child having undergone through a stipulated time frame of learning. There is an important thing which one must know about minimum and that is that minimum is not necessarily optimum In other words, it may be stated that minimum does not necessarily reflect higher competencies.

Masterly Learning in MLL

The concept of mastery learning in the implementation of MLL requires that all the competencies or almost all the competencies are to be mastered by all the children or almost all the children. When we say all the competencies are to be mastered by all the children we mean 100x100. In this, first 100 refers to number of competencies (100%) and second 100 refers to number of children (100%) This indeed is an ideal situation. But when we say almost all the competencies are to be mastered by almost all the children, then we mean a near ideal situation which might be 90x90, 80x80, 70x70 or 60x60. The present scenario, however, warrants a near ideal situation so as to facilitate the implementation of this programme.

As soon as the idea of 100x100 is scaled down, to say 80x80, it calls for conscientious and consentaneous interpretation. Some of the possible interpretations of 80x80 which people are seen around to make are listed here as under:

i) One interpretation of 80x80 is that 80% of the competencies are to be mastered by 80% of the children In this case, some think that of the ten competencies, if eight are mastered, it serves the purpose. If so, then the question arises as to why there are ten and not eight competencies?

ii) Another interpretation of 80x80 is that 80% of the competencies are to be mastered by 80% of the children and the remaining competencies are to be mastered, if not up to 80%, may be up to 60% or 50%.

iii) One more interpretation of 80x80 is that 80% of each competency is to be mastered by 80% of the children It takes cognizance of each and every competency, even though it may not be an educational situation

iv) Yet another interpretation of 80x80 may be that 80% of each competency is to be mastered by 80% of the children. However, there cannot be any compromises with regard to certain competencies which are to be mastered by all the children In an educational situation there is a likelihood that some of the competencies may be mastered up to 100% while some may be mastered up to 80% and some may be mastered up to 60% or 50% or so This interpretation sounds to be more practical than others

Competency or Objective

Minimum levels of learning may be stated in a variety of ways. However, in the report of the Committee set up by the MHRD, they have been stated in the form of competencies The terms 'objective' and 'competency' appear to have aroused lot of controversies There are some who view them as synonyms. An objective is a set of predetermined targets of learning which are expected to get reflected in learner's behaviour, so is a competency An objective may be divided into two or more levels of attainment, so may be a competency. If learning outcomes are to be measured in terms of raw scores on an interval scale, an objective and also a competency may have a continuum from 0-100.

Some are of the opinion that objective is more comprehensive than competency. They are of the view that an objective may have a number of competencies. Quite often, they take example like this. Suppose we are to build up language comprehension ability amongst the children. For this, we are to make the children listen, speak, read, write and understand, to ensure language comprehension amongst the children. In this way, they consider language comprehension as an objective and listening, speaking, reading, writing, etc as competencies. But remember, it all depends on how you define an objective. Besides, there are some who do make distinction between these two on different counts They say that objective is behaviour oriented while competency is skill-oriented. They are of the view that under objective the emphasis is on acquisition of knowledge whereas under competency the emphasis is on development of skill. This confusion may, however, be avoided if they are treated alike.

Index of Quality

The word 'quality' in this context refers to degree of excellence Implementation of MLL requires that this word quality should pervade the whole programme If so, then we ought to know the criteria of quality Once we know the criteria it will help us realise whether or not quality has been achieved In the context of MLL, competency which refers to a set of predetermined targets of learning, is the only criterion of quality in its true sense. However, the degree of empowerment or the mastery level may also be treated as a second criterion of quality. Though this criterion is subsumed in the earlier one, it might still be considered as a second criterion. Therefore, competency becomes the first criterion of quality and the level at which this is to be attained by the learner becomes the second criterion of quality. Of them, the first criterion is a fixed criterion. It means that learners are expected to learn all the competencies which are listed out for them in a particular course content. The second criterion which refers to level of attainment, may, however, vary from learner to learner In certain cases it might be cent-per cent while in others it might be ninety per cent, eighty per cent, seventy per cent, and so on It is, therefore, clear that in the present context each competency and its level of attainment provide the index of quality in education.

Needless to say, developing a few islands of excellence in the name of qualitative improvement does not meet out the demand of quality education nor that of universalization of primary education. Concerted efforts should be made to achieve a minimum level of quality without disturbing the optimum levels in all institutions imparting primary education. But now the question arises as to what should one look for in assessing the quality of a primary school? Show one look for the level of material known as antecedental variable or for human inputs available known as cognitive and non-cognitive capitals?

Role of Antecedental Variables

The conditional elements in a proposition are called antecedental variables. Some of the very many antecedental variables which are expected to bring in qualitative improvement in education are setting-up of good institutions, hiring of good teachers, arranging good textual materials for learners. There is no denying the fact that antecedental variables are extremely essential but none of them guarantees achievement on its own. These variables together generate an interactive process which helps further learner's achievement. Of the various interactions of this interactive process, the most important is teacher- learner interaction wherein the teacher acts as a guide. The learning which takes place during this interaction is known as guided learning The second important interaction in which one learner interacts with another learner is known as interlearner interaction or learner-learner interaction. This type of interaction generates inter-learner learning and is expected to enrich the total interaction process. The third important interaction is known as learner material interaction. This type of interaction which obviously takes place between learner and material generates self-learning. It signifies that guided learning, inter-learner learning and self-learning are the outcomes of the interactive process generated by various antecedental variable Further, it indicates that the quality of education may be enhanced not merely by ensuring antecedental variables but by generating an interactive process.

Development of Cognitive and Non-cognitive Capital

The school has two important functions to perform. One is to develop those capacities amongst the children which they bring in along when they come in the school Another vital job of the school is to build up those essential capacities amongst the children which they do not possess at the time when they enter into the school. Of them, some are cognitive capacities and some are non-cognitive capacities. These cognitive and non-cognitive capacities are two inseparable sides of the same coin yet distinctly different from each other. Obviously it does mean that with the development of cognitive capacities there will be a corresponding development of appropriate non-cognitive capacities These cognitive and non-cognitive capacities are indeed the cognitive and non-cognitive capitals of our nation Unfortunately we are neither able to develop nor build up high degree of cognitive and non-cognitive capitals and the consequence is low level of learning amongst the children. If we are to change our learning curve from positively skewed to negatively skewed (increasing the number of high achievers) which we know we cannot do overnight, we shall have to make concerted efforts for the development of cognitive and non-cognitive capacities. This requires the commitment of one and all in the society besides making use of competency-based textual material, competency-based teaching involving all kinds of innovative techniques and continuous and comprehensive evaluation

Continuous and Comprehensive Evaluation

Each learning experience provided in a teaching-learning process is expected to bring about a desired change in the learner's behaviour. The degree of that might vary from learner to learner In fact these variations make assessment of the learner's behaviour so complex that no single criterion of measurement, no single source of measurement, nor any single technique of measurement is good enough to do the job This becomes all the more compound when large number of children are to be evaluated in a class situation. It is precisely the reason as to why we employ multiple techniques of measurement, multiple criteria of measurement, as also multiple sources of measurement. Use of all these is possible only when evaluation is totally integrated with the teaching-learning process. This integration may be made possible only when one goes in for continuous and comprehensive evaluation.

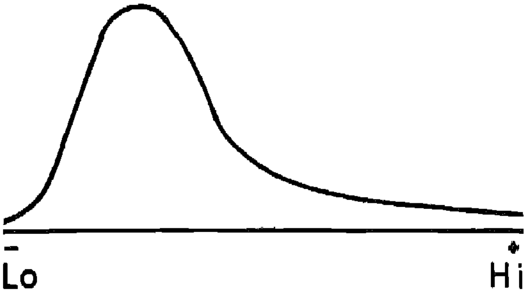
Before we discuss continuous and comprehensive evaluation, it may be pertinent to mention that the approach of evaluation in this context has to be different from that of conventional approach. And, that is, that it must be criterion-referenced rather than norm-referenced. This must be so, mainly because here the purpose is not to go in for inter-learner comparison. Here we have a criterion before us and that is nothing but a competency which is to be acquired by each learner In other words, it may be stated that here evaluation has to be oriented for quality improvement and not for measurement.

The two words used in the title, 'continuous' and 'comprehensive' are complementary. They serve each other Of them, the word 'continuous' refers to regularity or frequency of testing while the word 'comprehensive' refers to assessment of cognitive and non-cognitive learning outcomes providing adequate coverage to each of their constituents. This description makes it quite clear that comprehensiveness in evaluation cannot be ensured without maintaining continuity and vice-versa.

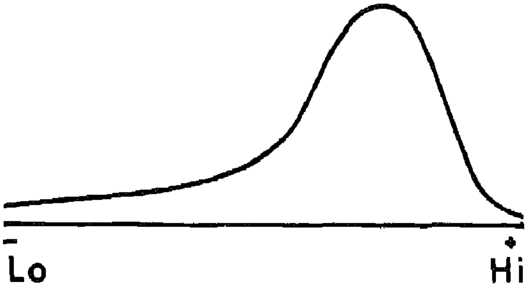
The process of evaluation should start with pretesting. Pretesting should be done in the beginning of the academic session so as to know the readiness of the learners to learn competencies which we intend to teach them. Pretesting not only provides us with benchmark data but it also helps us organise remedial programmes for weak learners Some people are of the opinion that pretesting is necessary only at the entry level, that is, only for those who enter into grade one. Subsequently, their annual examination marks may be used to determine their level of readiness. But there is a catch in it and, that is, that many a time there is no 'one is to one' correspondence between the competencies of grade one and two and grade two and three, and so on. If that is so, then it may not be appropriate to make predictions about their readiness to learn new competencies on the basis of their previous annual examination marks. Besides, children often have the tendency of forgetting things and, therefore, it may be desirable to go in for pretesting of all the children irrespective of their grades. In fact, pretesting is so vital an antecedental variable that it provides motion to the entire exercise.

Pretesting should be followed by competency-based unit testing and wherein efforts must be made to integrate evaluation with the entire teaching-learning process. This integration, however, should be carried out on hour-to-hour basis, minute-to-minute basis as also second-to-second basis. This may be possible only when the teacher develops an evaluative eye This activity will not only ensure continuity but also comprehensiveness which probably may not be possible through periodical tests or annual examinations. Periodical tests and annual examinations have their own significance. Therefore periodical tests may be carried out four to five times a year and annual examination once a year. But one need not forget that because of the sampling of the content, these tests fail to ensure comprehensiveness in evaluation which may be ensured only when evaluation is integrated with the entire teaching-learning process Portfolio assessment technique which is used for collection of performance over extended period of time both by teachers and learners may prove to be quite useful in the present context

Another important consideration required in this whole scheme is that while testing we should have a perfect dichotomy amongst the learners in the form of masters and non-masters. Masters are those who acquire competency and non-masters are those who do not acquire competency. At each and every stage of testing we are to ensure that all our children turn out to be masters. If some of them turn out to be otherwise, they should also be converted into masters through remedial programmes. We must, therefore, make it a point that we shall not move on to the next frame of course content until or unless all our children master the competencies of the earlier frame. The children who turn out to be masters should also be associated in organizing these remedial programmes. This will help save time and energy in converting non-masters into masters Besides, this will also help masters to sharpen their skills. This becomes all the more necessary from practical point of view especially when we decide not to move on to the next frame only with a handful of masters. This exercise may be carried out on the basis of the model given below



A Positively Skewed Distribution



A Negatively Skewed Distribution

Tests

Competency testing is not at all a new thing. It must have been around for a long long time, for about as long as the professions have existed. One of this author's favourite examples of a competency testing has been graciously provided by Mehrens and Lehmann (1987)

> MCT : A very early minimum competency exam was when the Gilead Guards challenged the fugitives from Ephraim who tried to cross the Jordan river
> "Are you a member of the tribe of Ephraim?" they asked If the man replied that he was not, then they demanded, "say Shibboleth" But if he could not pronounce "Sh" and said Sibboleth instead of Shibboleth, he was dragged away and killed. As a result, 42,000 people of Ephraim died there at that time (Judges 12:5-6, The Living Bible)

The purpose here is not to suggest the kind of test with no chance of retake. In this whole exercise two important aspects which should not lose sight of are the type of tests and the quality of tests. Tests are an important instructional tool and need to be improved. Test results must provide honest measures of achievement. Our tests undoubtedly must be criterion-referenced and they should be potential-oriented rather than achievement-oriented. Though it will be difficult to make distinction between achievement and potential, we may strive to give inclination to our tests towards tapping potential. This would, of course, require investigative approach wherein we must generate competency-based test items so as to develop competency-based tests

As regards the assessment of affective learning outcomes, one is forced to say that we neither maintain continuity nor comprehensiveness. Unfortunately no one wants to shoulder the responsibility for the development of these learning outcomes. Schools think it is the responsibility of the parents and the society and the parents think it is the responsibility of the schools. There is no denying that it is more difficult to structure and assess affective learning outcomes and perhaps it has been one of the main reasons which kept back researchers from making significant advances in this area (Prakash,1990) Not only that, they are assumed to take relatively more time and become visible in appraisal techniques only after a long period of time, hence more difficult to assess.

Despite all these constraints, first of all we should try to identify the constructs of each of the affective learning outcomes and then subsequently employ appropriate techniques for their measurement so as to ensure all-round development of the child.

Operational Aspect

The first and foremost thing in operational aspect is to know the current position of our learners with regard to their levels of achievement. Though their levels might vary from state to state, district to district and possibly from school to school, we may do some trend analysis so as to obtain a general picture. The trend analysis indicates that in majority of the institutions the learning curve is positively skewed which signifies that the number of low-achieving children is far more as compared to that of their counterparts. Now the situation warrants that this positively skewed learning curve should be converted into negatively skewed curve so as to increase the number of high-achieving learners. Obviously, when we try to change our learning curve from positively skewed to negatively skewed it will first change from positively skewed to normal distribution and subsequently to negatively skewed. Our efforts must continue until we reach the highly negatively skewed learning curve.

This skewness of the learning curve cannot be changed without the learners and the teachers which are the most vital antecedental variables One of the factors responsible for poor achievement is the poor attendance of the learners This is particularly true to rural schools. The teachers in these schools consider this factor as the most vital factor The students in the rural sectors are often engaged by their parents in field work or house chores. This calls for generating awareness amongst the parents. Besides, what is needed most is the involvement and motivation of the teachers. The role and relevance of the teacher for effective education have been highlighted in almost all the reports and policy statements. Of them, the prominent ones are "The Teacher and Society, 1985", "National Policy on Education, 1986" and "Towards an Enlightened and Humane Society, 1990". One way of involving the teachers is to share with them the results of pretesting and periodical testing so as to make them realise that their students are not doing as well as they ought to The teachers with sound character, thorough knowledge of the subject they propose to teach and the ability and desire to communicate that knowledge to the students should be suitably rewarded While doing so, at the same time, incompetent teachers should be warned and given opportunities to improve. This may be ensured only when employers do not compromise with the standards Besides, orientation programmes for the teachers may be organized on continuous basis with a view to making them competent to identify and tackle hard sports of learning. Through these programmes they may be advised to avoid traditional methods which are over-stressed as also to avoid invisible untouchability wherein a learner does not prepare a lesson which is not taught to him/her in the class. Invisible untouchability is not a sign of good education. This requires continuous monitoring and monitoring not only by Block Education Officers or Divisional Inspectors, etc. but also by local agencies which should be formed at the grassroots level. Since this work is such that it requires frequent interventions, local agencies may prove to be extremely effective in the implementation of this programme. Local agencies should mobilize local resources such as unemployed boys and girls, educated home makers and retired personnel. Besides utilizing this work force for directed teaching-learning activities, local agencies should also use them in mobilizing reticent members of the society, especially those who are reluctant to send their children to school. For this, we should trust our grassroot workers, and never undermine their potential

No doubt, national-level or state-level agencies can also contribute significantly but it may be desirable if they take the role of a guide, for their contacts with the grassroot workers remain intermittent. In such a situation direct intervention of national/state level experts may not provide as much dividends as an interactive partnership with the local agencies

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Cognitively-oriented Programme for Preschool Children : Impact on the Grassroot Level Workers

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THE Integrated Child Development Service Programme (ICDS) launched in India in 1975 as a comprehensive scheme to promote integrated development of the child started as an innovative experiment in 33 projects. It has been expanding since then. ICDS which is a bigger child welfare/development programme of India, takes a holistic approach to the child by providing a package of services including periodic health check-ups, referral and medical services, monitoring of growth immunization, supplementary feeding, non-formal preschool education and nutrition and health education for mothers. The services are provided at the Anganwadi (literally court yard play centre) a focal point for delivery of service at the community level. It has been envisaged that an attempt shall be made to reach every child under six before the turn of the century. It is thus the biggest child welfare/development programme of the country and has emerged as a single major integrated social development programme of the eighties in the developing countries (Sharma, NIPCCID, 1987)

Non-formal pre-school education is a very crucial component of the ICDS schemes as it has been now recognised very well that the early years are a time of the most rapid physical and mental growth and set the stage for the later years. There is a feeling that the pre-school education component is not being delivered in the desired manner. To remedy such a situation, it is very important that the ICDS functionaries are provided constant on-job training so that pre-school education remains non-formal in the true sense and the Anganwadi does not become another primary school (Gopal, 1983). Thus a well-conceived, clearly formulated and comprehensive in-service training programme or curriculum is an essential condition for an adequate professional preparation of preschool teachers, without whose active participation, no qualitative improvement of education is possible (Patel, 1976) The Aga Khan Foundation's Project, Cognitively-Oriented Programme for Preschool Children (COPPC) based in Karnataka, is a step towards fulfilling this need COPPC was implemented in Karnataka State, India, during the period 1985-87.

This project utilised the existing infrastructure of the ICDS functioning in the disadvantaged sections of the society. The COPPC Programme attempts to affect the population of Karnataka, in general, and preschool children, in particular. COPPC strives to provide (a) cognitive enrichment to these preschool children, (b) practical comprehension of the significance of the concept of cognitive development in the adults, who are responsible for the care and education of the disadvantaged preschool children. The COPPC Project which was officially launched on 1 May 1985 by the Karnataka State Council for Child Welfare (KSCCW) covered seven batches of trainees from the seven districts of Karnataka In the seven batches 140 workers were trained directly. But the ripple effect of the training, through (a) one-day cognitive workshops in every ICDS project area, and (b) on job training during the COPPC Director's daily visits to the Anganwadi Centers had reached to cover 6000 workers. Extension of COPPC training by the COPPC trainees is also done. This confirms the feasibility and transferability of the practical aspects of the COPPC methodology to large numbers thereby making the project effective.

Need for the Present Study

It becomes imperative to monitor and evaluate a programme of this nature to see whether it is implemented meaningfully and effectively and to assess the impact it has on the target group. This research attempts to summarise the extent to which the grassroot level workers can make use of the cognitive approach and materials in their day-to-day work in fostering the cognitive development of children. Keeping the aims of the COPPC programme in mind, the following objectives were delineated.

1. To examine the extent to which COPPC training enables its trainees to understand and apply the basic principles of the cognitive approach (emphasis on experience, activity and communication) in early childhood education
2. To study the effect of COPPC training on the trainees' skill in modifying existing anganwadis/balwadis into cognitively-oriented ones, incorporating cognitive enrichment activities.
3. To examine the effect of COPPC training in enabling its trainees to apply and use the learned information to develop strategies for interacting with children and situations and also to face and solve day-to-day constraints and limitations in their field.
4. To evaluate the influence of COPPC training on the betterment of teachers' skills in management, communication and training co-workers
5. To study the effect of COPPC training on the preparation of low cost and cognitively-oriented play things, learning materials and also on the maintenance and repair of the same.

Method and Materials

Design

The design selected for this study is the before and after control group (pre-test;post-test). When pretests and post-tests were used,matching of course was present (Kerlinger,1973)

(R) Yb1 X Ya1 (Experimental
Yb2 X Ya2 (Control)

The experimental manipulation of an inservice training (COPPC) course for anganwadi/balwadi workers was performed on one of the groups (Experimental Group) after which both the groups (Experimental and Control) were again measured on the dependent variable, that is, in the trainees' specific skills in organising cognitively stimulating environment, and application of the principles of the cognitive approach to different groups of children and training coworkers.

Sample

In the two-year period of the COPPC Project, seven batches of trainees underwent training. In order to see that the sample had equal representation from all parts of Karnataka, the following procedure was adopted. Two lists of anganwadi from the seven districts were prepared, one for those anganwadi centres whose functionaries had undergone COPPC training while the other list was for those centres whose functionaries were not exposed to COPPC training. Thus the sampling procedure followed for the selection of anganwadis was stratified random sampling

The total sample comprised of 134 subjects Of these, COPPC Group (Group I) constituted 45, non-COPPC Group (Group II) consisted of 26, TN Group (Group III) 45 and ICCW (Group IV) was composed of 18.

In the beginning it was decided to take 50 COPPC trainees and 50 non-COPPC trainees from all the seven districts The dissemination of COPPC approach is evident in most of the districts of Karnataka. This has caused "contamination" effects, that is, both COPPC and non-COPPC workers were found to sing the same cognitive songs and make use of some items of the cognitive kit and approach of teaching to some extent On the basis of the discussion with Dr. Robert Myers, Coordinator, Consultative Group of Early Childhood Development (ECD) in New York, a similar research study was conducted to evaluate the status of Preschool Education Services in the ICDS Projects in areas where COPPC has not reached (TN Group).

Care was taken to see that there was equal representation of all the seven batches in the COPPC group (experimental group) Except COPPC training, other variables were controlled by careful matching.

Instruments Used

The observation profile designed by the Oxford research team was adopted by Srivastava (1986) for the present study. This form was used before and after each actual observation session. There were sub-topics under which observation could be carried out, such as cleanliness of preschool centre, room arrangement, daily routine, planning time, clean-up, skill in organising small group activities for children, outdoor activities, implementation of active learning, teaching number concepts, spatial relationships, communication skills, story-telling, teaching science and art, good habits, conducting music sessions and skills in the use of materials. Inter-scores reliability method was used to find out the objectivity of the observation profile. Inter-scores reliability for the total score was 6.79.

Procedure

The research consultant and her team of research assistants visited the selected anganwadi centers before the actual investigation was started. The community leaders were contacted and informed about the purpose of the visit. After developing rapport, whatever information was required, it was collected through observation, participation and informal talking, after the selected candidates underwent COPPC training for three months. The research team made periodic visits to programme sites and devoted all their attention to the behaviour of anganwadi workers within a natural setting and for a prescribed time Period. They were given detailed guidelines about what to observe, when and how long to observe and the method of recording information. On site observation, though it consumes a fair amount of time and effort, has high credibility because the observers view the programme and events as they occur and report what actually took place. Secondly, the observers provide a point of view different from that of people most closely connected with the programme.

Results and Discussion

1. *Skill in Arranging the Room (Anganwadi Centre)*

It was found that the COPPC group scored high ($\bar{X}$=11.18) in room arrangement, followed by the Balasevikas ($\bar{X}$=8.06), the non-COPPC group ($\bar{X}$=7.31) and the TN group ($\bar{X}$=5.51). To find out whether these four groups differed significantly from each other, the data were subjected to one-way analysis of variance. The analysis revealed a significant difference (F-ratio=15.079; df=3,129; p<0.01) among the four groups with regard to their skills in arranging the room (anganwadi centre). It may be inferred that COPPC training had enabled its workers to arrange the room which would facilitate effective teaching-learning process in their centres. Therefore, the COPPC group could show superior skill in the arrangement of their anganwadi centres.

2. *Skill in Providing Play Equipment*

In their skill of providing and arranging play equipment, the ICCW group scored very high, ($\bar{X}$=16.11), followed by COPPC group ($\bar{X}$=10.34), the TN group ($\bar{X}$=7.16) and the non-COPPC group ($\bar{X}$=6.04). One-way ANOVA results for provision of play equipment for all the four groups showed that the mean of the analysis of variance (F-ratio=17.220; df=3,129; $p < 0.01$) was significant. It was clear that the COPPC, non-COPPC, TN and ICCW groups differed significantly in their skill for providing play equipment.

3. *Skill in Organising Daily Routine*

The mean scores for the skill in organising daily routine of the COPPC, non-COPPC, TN and ICCW groups were 15.98, 10.85, 12.07 and 14.33, respectively. The mean values indicate that the COPPC group excelled among all the given groups. One-way ANOVA showed that the F-ratio for the afore-mentioned skill was significant (F-ratio=5.32; df=3,129, p<0.01) which leads us to conclude that these four means differ significantly. The COPPC group displayed better skill in organising daily routine than the other groups.

4. *Planning Time*

With respect to planning time also, it was observed that the COPPC group excelled in this skill ($\bar{X}$=6.04). The mean scores of the non-COPPC, TN and ICCW groups were 3,92, 4.28 and 5.22 respectively. One-way ANOVA showed significant difference in their skill in planning time among the four groups (F-ratio=4,305; df=3,129; p<0.01). It indicates that these four means differ significantly. The results indicate that COPPC training had enabled its trainees to plan ahead.

5. *Clean-up Time*

The mean scores for the clean-up time skill were 4.39; 2.58; 3.47 and 4.33 for the COPPC, non-COPPC, TN and ICCW groups, respectively. The results of one-way ANOVA revealed that the four groups differed significantly (F-ratio=3.211; df=3,129; p<0.05) from each other in their skills for clean-up time. The better skills of the COPPC group in clean-up time in their anganwadi centres may be attributed to their training which emphasized better hygiene and cleanliness in their environment.

6. *Skill in Organising Small Group Activities for Anganwadi Children*

The mean scores for the skill in organizing small group activities for anganwadi children of the COPPC Group ($\bar{X}$=8.04) was much greater than the other groups. The mean scores of the non- COPPC, TN and ICCW groups were 5 42,293 and 4.0, respectively. One-way ANOVA disclosed the fact that the given four groups differed significantly in their skill in organising small group activities for anganwadi children (F-ratio=17, 526; df=3,129; $p<0$ 01). It may be inferred that COPPC training which lays stress on its trainees to learn and organize small group activities for their children has its positive effects on the COPPC group which displayed better skills.

7. *Skill Organising Outdoor Activities for Anganwadi Children*

In their skill of organising outdoor activities for anganwadi children, the COPPC group excelled the other ($\bar{X}$=7.91), followed by the ICCW group ($\bar{X}$=6.0), the TN group ($\bar{X}$=5.8) and the non-COPPC group ($\bar{X}$=5 5). The calculated F-value (F-ratio=3.67, df=3, 129; $p<0$ 05) is significant at five per cent level of significance. It may be concluded that the COPPC group exhibited better skill in involving the whole group in vigorous outdoor play and the consequent socialization of the group

8. *Skill in Implementation of Active Learning Among Anganwadi Children*

In implementing active learning in their respective anganwadi centres, the COPPC group showed excellent skill than the other groups ($\bar{X}$=11.36). This was closely followed by the non-COPPC group ($\bar{X}$=8.61) the ICCW group ($\bar{X}$=7.22) and the TN group ($\bar{X}$=5.13). This difference may be attributed to COPPC training. One-way ANOVA showed significant difference (F-ratio=12.837; df=3, 129; $p<0$ 01) among the four groups under study The results indicated that the performance of COPPC was consistently better than the other groups

9. *Skill in Teaching Number Concepts to Anganwadi Children*

In teaching number concepts to preschool children, COPPC workers had marginally higher mean scores ($\bar{X}$=4.64) than the other three groups. Both the non-COPPC and TN groups obtained almost the same means ($\bar{X}$=3 38) and ($\bar{X}$=3.83), respectively. The TN group did not perform better on this skill ($\bar{X}$=2.44). One way ANOVA showed that all the four groups differed significantly in their skill of teaching number concepts to preschool children (F-ratio=4.072, df=3, 129, $p<0.01$).

10 *Skill in Teaching Spatial Relationships to Anganwadi Children*

A relatively superior skill in teaching spatial relationship to anganwadi children was displayed by the COPPC group ($\bar{X}$=9.68), followed by the non-COPPC group ($\bar{X}$=5 31) and the ICCW group ($\bar{X}$=4.5). It is disheartening to see that the TN group did not show any skill in this aspect ($\bar{X}$=1.86) Significant difference (F-ratio=21.960; df=3,129; $p<0.01$) was observed among the four groups. The COPPC group was superior to the other groups in this skill.

11. *Communication Skills*

Conspicuous differences can be seen in the mean communication skills scores of the four groups The COPPC group obtained the highest mean score ($\bar{X}$=16.82), followed by the ICCW group ($\bar{X}$=15.72) and the TN group ($\bar{X}$=12.36). The lowest score for communication skills was received by the non-COPPC group ($\bar{X}$=8 58). It is interesting to note that the TN group which obtained very low means scores in the previous ten skills obtained quite a high score in this skill. The difference among the four groups was significant (F-ratio=8, 138; df=3, 129; $p<0.01$).

12. *Skill in Story-telling Techniques*

A comparison of the mean score for story-telling skill of the groups under study disclosed that the ICCW group excelled all the three groups ($\bar{X}$=8 94),followed by the TN group ($\bar{X}$6.35), the COPPC group ($\bar{X}$=5.0) and the non-COPPC group ($\bar{X}$=4.31). When one-way ANOVA was computed, it disclosed that the four groups differed significantly from each other (F-ratio=6.11; df=3, 129; p<0 01) in their story-telling skills.

13. Skill in Teaching Science and Arts

It was found that the COPPC group scored high ($\bar{X}$=8.30) in skill in teaching science and arts, followed by Balasevikas ($\bar{X}$=5.89), the non-COPPC group ($\bar{X}$=3,192) and the TN group ($\bar{X}$=2 58). The F-ratio for the skill in teaching science and arts was significant (F-ratio=3,163, df=3, 129, p<0.05).

14. Skill in Inculcating Good Habits

In the skill in inculcating good habits, balasevikas scored high ($\bar{X}$=5,611), followed by the TN group ($\bar{X}$=4.76), COPPC ($\bar{X}$=4.06) and the non-COPPC ($\bar{X}$=4.04). However, the observed difference did not reach statistical significance (F-ratio=1.399; df=3,129). It may be inferred that all the four groups were homogeneous with regard to their skill in inculcating good habits among children.

15. Skill in Conducting Music Session

The mean scores for conducting music session were 6.05; 5.38,6.10 and 5.94 for the COPPC, non-COPPC, TN and ICCW groups, respectively. It may be seen that the ICCW group had scored higher than the other groups in this skill. The four groups differed significantly from each other in their skill in conducting music session (F-ratio=4.826; df=3, 129; p<0.01).

16. Skill in Use of Materials

The mean scores for use of materials of the COPPC, non-COPPC, TN and ICCW groups were 9.52, 6.69 and 4.91 and 10.22 respectively. The difference among the mean scores of the four groups was significant (F-ratio=13.007, df=3, 129, p<0 01). Balasevikas excelled in their skill in the use of materials.

Discussion

An attempt is made here to document the impact of COPPC training in the range and depth of their skills. Overall, the COPPC workers showed an improvement in their skill of delivering PSE at their centres.

1. With regard to room arrangement, the present study revealed that the COPPC group excelled while the ICCW group scored high in the provision of play equipment. The striking difference in the COPPC and non-COPPC groups was found in room arrangement The COPPC centres were quite clean and bright, having a couple of charts all in Kannada on health, hygiene, nutrition and alphabets. The COPPC materials were arranged on a low table. On the contrary, the non-COPPC group showed no effort to improve their centres by changing the room arrangement or in provision of play equipments. Though the children were familiar with all the materials, it was curious to note that no child expressed interest in touching or handling the materials.
2. The COPPC group displayed better skills in organising daily routine in their respective centres. In general, they carried out the activities with missionary zeal and their children (pupils) were alert, active and responded well. The teacher also enforced discipline. Hence, it stands to reason that COPPC training did show its impact in this skill of the COPPC workers.
3. In respect to planning their time, the COPPC group excelled in this skill. The research team observed that the COPPC workers asked the children's choices as to what they would like to do after each activity. Therefore, the

children's choices were taken into consideration and given due respect. A regular cognitive time table was followed but not very rigidly. The children's interest and seasonal variations were taken into consideration.

4 The COPPC group displayed excellent skill in clean-up time which could be very well due to the effect of the training they received at KSCCW It was observed that, except very few in all the COPPC centres, clean-up time was initiated by the teacher and the children helped in this Many centres were kept clean, and the children also appeared relatively neat and tidy with clean dress, nails cut and hair properly combed.

Some non-COPPC AWW's when asked why their children were not dressed properly, told that although their children were taught to keep themselves clean they continued to be untidy. On the contrary, the COPPC workers seemed to be more concerned about the cleanliness of their centres and the surroundings. They manifested more concern for the well-being of the children and this is also reflected in the better cleanliness and care of the children.

5 It is evident from the data that the COPPC workers excelled in their skill for organising small group activities for the Anganwadi children One of the biggest constraints an AWW faces is large number of children in the centre. The research team observed that the COPPC workers organised small group activities in a very effective way. This is reflected in children who were all well-used to the system of managing with those of other groups and there existed some kind of discipline and excitement inspite of boring lazyness at times. Non-COPPC worker complained about the number of children as too much to control Both non-COPPC and TN groups attributed "large number of children" to their ineffecive way of delivering PSE in their respective centres.

6 The COPPC workers displayed excellent skill in organising outdoor activities for anganwadi children The research team observed them at ease both in indoor and outdoor play Though some of the centres did not have enough place for play, they took the children to nearby temples or vacant place for outdoor play. Proper supervision was provided. They also taught them some group games with rules and regulations. Both TN and non-COPPC groups showed least interest in conducting outdoor play.

7. Overall, the COPPC group did show superior skill in implementing active learning in their anganwadis The research team saw the COPPC workers actively participating in children's play, and also initiating and supporting children's activities and helping them to plan and recall The kit materials were very helpful in these learning situations

8. The data presented showed that, by and large, there is a significant difference between COPPC and other groups in their skill in teaching number concepts As excepted, COPPC showed very good skill. Though COPPC is leading in the skill, it is felt that more pre-match experience should be included.

9. Even in the skill in teaching spatial relationships to anganwadi children, COPPC showed better skills. Longer periods were spent using materials displaying size, space and other concepts The workers made use of environmental and kit materials for this purpose. The children of COPPC workers seemed to be quite sure of colour concepts and shapes.

10. It is clear from the results that the COPPC

group proved to be very good in its communication skills. They were found to be very good, complete in their communication which was very much emphasized during the Phase II of COPPC training. The non-COPPC group was found to be relatively hesitant and self-conscious in their communication strategies.

11. The COPPC group was third, in order, in story-telling techniques The research team witnessed the COPPC faculty teaching the workers in the preparation and use of puppets, charts, single paged books and voice modulations for story-telling in the anganwadis. The probable reason for the COPPC group for not having acquired this skill might be that they needed more reinforcement in this area.
12. Statistically significant differences in the mean scores of skills in teaching science and arts indicates that COPPC could give sincere experiences and arts in a very effective way. Though COPPC proved comparatively better in skills, it is felt by the research team that some more inputs and constant guidance is needed to improve this skill.
13. The results showed that the COPPC mean score for skill in inculcating good habits was third in order. Contrary to the expectation, there was no difference in their skill in inculcating good habits among the COPPC, non-COPPC and ICCW and TN groups. Ananda and Anandi dolls are helpful in teaching about body hygiene and healthy habits. Though these dolls became a part of every COPPC centre, it is discouraging to note that the group did not utilise them for inculcating good habits. The team did not observe any COPPC worker attaching significance to good habit formation during this formative period such as washing hands before noon meal, etc
14. On the basis of the results, it can be stated that there was significant difference in the skill in conducting music session, with the ICCW group showing superior skills. Between the COPPC, and the non-COPPC group the former showed better skill The children participated and sang along with the COPPC workers all the action songs and cognitive rhymes Contrary to the traditional method, the workers sang with the children with actions.
15. In use of materials the ICCW and COPPC groups showed very good skill. In general, the non-COPPC and TN groups were very unsure of their position, and did not conduct any activities/use materials Most of the materials were unused

To sum up, the superiority of the COPPC group in many skills is undoubtedly due to training they received In general, they seemed to have a good group of the PSE component, they could cope up better with different constraints and tended to be active, motivated and confident.

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Education of the Tribals

(With Special Reference to Rajasthan, Bihar and Uttar Pradesh)

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THERE are about 450 tribal groups in the country. These are concentrated mainly in remote hilly areas of Madhya Pradesh, Orissa, Bihar, Rajasthan, Gujarat, Maharashtra, West Bengal, Assam and Meghalaya. However, numerically, the most important tribes are — Gonds of Madhya Pradesh, Maharashtra and Andhra Pradesh, Bhils of Rajasthan, Gujarat, Maharashtra and Madhya Pradesh,and Santhals of Bihar, Orissa and West Bengal. Bhils, Gonds Santhals, Minas, Mundas, Oraons are the major tribes whose numerical strength is more than 10 lakhs each. All the tribes combined form 8 per cent of India's total population. Like the Scheduled Castes, the Scheduled Tribes have been identified as the most disadvantaged groups–economically, educationally and also from the point of view of development. The only obvious difference between the two most disadvantaged groups is that while the Scheduled Castes have been treated shabbily, they want to give up their identity and merge with the general society. The Scheduled Tribes have a unique culture. They want to retain it and not join the general population. The approach to their problems will have to be of different nature.

An average tribal child grows up as a confident adult as he is trained in the tribal way of life right from the beginning. Most of the learning takes place in their social institutions, popularly known as dormitories A Savara tribal poem (in Andhra) which mothers generally sing almost daily summarises the tribal turbulations over the past century in which their economy did not make any progress in the modern sense of the word, except in the last two decades of post-independent India. Even in education, the tribals have not made much progress.

Review of Policies

The attitude of the British Government in India was of non-interference towards socio-economic and educational development of the tribals. A review of the policies/plans is, therefore, necessary to find out as to what steps have been taken by the Government of India. After 1947, the Government's concern for the tribals is seen in its welfare policies for their socio-economic development The country's Constitution declared SC/STs as backward and has made provision for their special protection vide Article 46, "The States should promote with special care educational and economic interests of SC/STs and protect them from social injustice and all forms of exploitation". In 1949, a special status was given to the SC/STs initially for ten years. It was extended in 1959 for another ten years and has since been extended twice The policy gave due recognition to the tribal culture/tradition and was not in favour of interference from outside agencies. The policy-makers did keep in mind the sensitivity of the tribals to the interference of the outsiders whom they had always considered as strangers. The government did not want anything to be imposed on the tribals and was of the view that the tribals must be allowed to develop on the basis of their capabilities. Efforts were to be made to build a team of local people to look after administration and development It was obviously clear that the local teams would be possible after sometime It was, therefore, decided to involve some experts from outside — however, extra caution was to be taken to avoid too many outsiders in tribal areas. This was done to save the tribals from reacting to the presence of outsiders/strangers and to avoid over-administration. Studies on the Scheduled Tribes of Tripura reveal that the social custom of marriage within the tribal community, in general (tribe endogamy), is strictly followed. Between intra-tribe and inter-tribe marriages, again, the former is commonly practised by most Scheduled Tribes of Tripura. Although Tripuri and Mag Tribes have deviated from the traditional path in the real sense, Chakmas are strict about 'tribe endogamy' Jamatia and Halam tribes do not go outside their community for spouses. The Moghia tribe is even more rigid — it does not want to change Even now if the skirt of a married woman touches anything, everything in the house becomes impure — they go to the extent of breaking the whole house — this ritual is known as 'ulak'. It continues because of the fact that the number of educated youths in the tribe is very small

Attempt was to be made to work 'through the tribals' and 'with the Tribals' No programmes of tribal development can succeed without their co-operation Tribals and their representative bodies should be excessively associated in all tribal programmes Any over-administration of tribal areas will only lead to eventual destruction of tribals as an entity, of tribal language as a distinct dialect and their potentialities as human beings towards the historical evolution of individual tribal cultures. All these were taken care of by the government as Jawaharlal Nehru believed that tribals must be approached in such a way that no stage should they feel that efforts are being made to take away their culture History had proved that an approach like this could be risky. The Government also felt that introduction of too many programmes/schemes would not be good as the tribals would not be able to mentally accept them. Caution was also to be taken of not going against the tribal institutions These could be used for educating the tribal girls. The tribals were also to get preference in admission to educational institutions and also in employment.

While the policy was being formulated, it was difficult to decide whether education was more important or development for the tribals. It was finally decided to have both education and development simultaneously. Even though special protection was to be given to the scheduled tribes, yet from 1952 began 'a period of special efforts for tribal development'.

During the First Five Year Plan, the Community Development approach was adopted — it was, however, not possible to reach the whole of the tribal population with this approach. After a review in 1959, the priorities were — Economic Development and Communication, Education and Public Health. It was suggested that systematic surveys of needs/possibilities in each area be carried out.

The Second Five Year Plan adopted the Integral Development approach, and also changed the priority areas — Education, Communication, Agriculture/Animal Husbandry and Health Care. The progress in education was slow. The Dhebar Commission (1962) observed that 'because education was provided in a mechanical manner, there was high wastage, non-participation and stagnation' It pointed out that the sectoral approach came in way of promotion of education. It suggested a 'comprehensive education model' for the tribals with unique problems.

When the Third Five Year Plan was being drafted, the suggestions/observations of the Dhebar Commission and the Elwin Committee were taken care of. While the amount for tribal development was increased, education was among the five priorities. In the Fourth Five Year Plan, education was a priority, but along with it special programmes were introduced — Crash Special Nutrition and Crash Employment It emphasized the need to develop a system of education which would meet the requirement of economic needs of the tribals.

Primary schools were to be opened at close proximity of tribal habitations and middle and secondary schools were to be centrally located — these schools had the residential facilities. In order to improve the quality of education, teachers were to be trained in the tribal perspective, methods of teaching were to be improved, vocational education was to be imparted. The Tribal Welfare Departments/Ministries made efforts to expand educational facilities, open schools in remote areas, establish Ashram Schools and hostels

After a critical review of the Fourth Plan, it was decided to change the approach in the Fifth Plan — for total development in general and education in particular. From the Fifth Plan began the Sub-plan approach, more commonly known as the Tribal Plans. The emphasis was on quantitative as well as qualitative expansion of education and the need to open pre-primary schools in areas with predominantly tribal population.

It was realised that it was important to give a correct tribal perspective and acquaintance with tribal culture/areas to planners, administrators and teachers to facilitate communication and take away the feelings of their being outsiders/strangers from the minds of the tribals.,

The National Council of Educational Research and Training (NCERT) worked to facilitate acquaintance with tribal culture/life It organised short-term orientation programmes for District Education Officers to help them understand the problems of the tribals. Since non-formal education had been suggested for 'out of school' children, the NCERT prepared syllabi for the teachers of non-formal centers

The educational facilities were expanded and they were to include Ashram Schools/Hostels, Remedial coaching to help the weak students and counselling/guidance. Voluntary organisations were given funds to look after Adult Education Centres

The Sub-plan approach continued in the Sixth Plan — it emphasized the need for universalisation of primary education — the focus was on non-formal education and adult education. Syllabi were to take into account the tribal cultural ethos, technology and their assimilative power. The teachers were trained to understand the tribal children's special problem

The Seventh Plan accorded the highest priority to education The emphasis was on the qualitative improvement of female literacy The

National Policy on Education, 1986 accorded priority to tribal education with emphasis on Universalisation of Elementary Education The POA suggested micro level planning, taking family as a unit to enable the coverage of all 6-11 age-group tribal children. Non-formal education was suggested for 'out of school' children. Need was felt to strengthen the existing facilities/schemes.

Contemporary Status of Scheduled Tribe Girls' Education

Literacy Rates, 1981 (National)

	General	Scheduled Tribes
Total	36.23	16.35
Male	46.89	24.52
Female	24.82	3.04
Rural	29.65	14.92
Rural Male	40.70	22.94
Rural Female	17.96	6.81
Urban	57.40	37.93
Urban Male	65.83	47.60
Urban Female	47.82	27.32

Enrolment Ratio of Scheduled Tribes, 1985 (National)

	Boys	Girls	Sex Ratio
Primary	113.2	68.8	576
Middle	41.3	19.2	436
Other Communities			
Primary	108.8	77.1	699
Middle	65.0	38.1	580

(Ministry of Human Resource Development, Selected Educational Statistics, 1985-86)

STATES

Rajasthan

State Female Percentage	11.42
State General Percentage	24.28
State ST percentage	10.27
State ST Female percentage	1.18

Tribal Sub-plan Area (TSP)

General Percentage	16.44
ST Percentage	7.84
General Female Percentage	6.79
ST Female Percentage	0.98

School-going Population(State ST in lakhs) 1990

	Male	*Female*	*Total*
6-10 (Total)	3.50	3.39	6.89
School-going	3.81	1.14	4.95
11-13 (Total)	1.85	1.78	3.63
School-going	0.96	0.11	1.07

No. of Schools (TSP Area)

	Male	*Female*	*Total*
No.of Primary Schools	2896	51	2947
No.of Upper Primary Schools	614	73	687

No.of Trained Teachers in TSP Area

	Male	*Female*	*Total*
ST Trained	1993	111	2104

Enrolment of Students

Class	*Male*	*Female*	*Total*
1-5	1.53	.53	2.06

The State has adequate facilities for the education of Scheduled Tribe Children. The number of Ashram Chhatrawas in Tribal Sub Plan Area will go up from 32 to 52. Out of these, five will be for girls. These will take care of about 4400 girls/boys. The 53 hostels look after 1325 students. Remedial coaching is available in 32 secondary/higher secondary schools. Talented boys' hostels take care of 50 students — now talented boys/girls scholarships are being introduced. In order to increase the number of tribal teachers, special STC — and B.Ed. units are being run for ST students. The two B.Ed. units look after 120 students and the four STC units look after 180 students. Schemes like supply of uniforms, books, scholarships, freeships are trying to attract of Scheduled Tribe girls to schools. The District Tribal Women's Development Agency is making efforts to promote girls' education in the area.

The Shiksha Karmi Project of the State is designed for application in remote villages where regular attendance of teachers is inhibited by lack of housing facilities and difficult access. The project is practical in approach as it improved the education by upgrading local human resources and by tapping local interest. It does not try to enforce a commitment and regular attendance of outside teachers. The project provides continual and active outside encouragement/support to the Shiksha Karmis — what the formal primary education system was failed to do. For increasing the enrolment of girls, female Shiksha Karmis are being trained. Women are selected from rural areas where the Shisha Karmi Yojna's centres are located. No formal qualification is required for admission to these training courses — the trainees should be preferably literate, but must be enthusiastic and with a desire to work as Shiksha Karmis. Each centre has creche facilities to look after the children of women trainees.

Most of the tribal population can be covered by this project as villages for such centres have been and are being selected on the basis of remoteness, low or very irregular teacher attendance and low enrolment of children The primary school teachers posted in the village are being replaced by Shiksha Karmis who will be requested to run day/night centres on voluntary basis — the Shiksha Karmi is given initial and recurrent training and monthly honorarium The centres are run in the existing primary schools — the primary education centres run by Shiksha Karmis in the day are run at night (NFE) for children who cannot attend the day centres.

Rajasthan is also trying its Saghan Shiksha Sub Project in Khairwara This works to generate awareness about school among 3-6 age-groups, brings 6-11 age-groups into universalisation of primary education, and strives for the 11-14 age-groups to get primary education. It has special programmes/schemes for SC/STs by way of giving preference to SC/STs in selection of teachers/Shiksha Karmis especially those who do not consider SC/STs as equals Women's Samitis and Village Education Samitis are to have SC/ST representatives — training is being given to people to understand their responsibility. There is a provision for one hostel per 3-4 schools with minimal expenditure — children who have never been to school, SC/ST children and very poor children are to get priority for free education/essentials.

2 Uttar Pradesh

1987-88	
6-11 age-group	- Enrolled in primary schools
	- 7,87,000 SC girls
	- 12,000 ST girls
11-14	- in schools
	- 1,74,000 SC girls
	- 2,530 ST girls
1988-89	- 8,68,000 SC proposed goal
	- 7,83,000 achieved
	- 0.13000 ST proposed goal
	- 0.09000 achieved
1988-89	
Non-SC/ST literacy rate among girls	- 48.02000
SC girls	- 7.83000
ST girls	- 0.09000

The State Government opened Non-formal Centres in SC/ST concentration areas.

1988-89	- 34285 SC girls enrolled
	- 1,21,225 ST girls enrolled
	- 4,64,893 Non-SC/ST girls enrolled
1989-90	
No of NFE Centres 33521	
December 1989	No of girls enrolled

SC Girls	1,08559
ST girls	2926
Non-SC/ST girls	4,15457

Statistics of the State prove that against one SC/ST girl, four non-SC/ST girls are enrolled

SC/ST : Non-SC/ST
1 : 4

The State is thinking in terms of increasing the incentives/facilities for promoting SC/ST education

3. Bihar

The 1971 census showed 19.94 per cent of the total Bihar population as literate, 30.64 per cent of total male population literate and 8.72 per cent of total female population as literate When one wanted to know about the educational status of Scheduled Tribe girls, the picture turned out to be a dismal one in the 1981 census

The situation did not improve as Bihar's percentage of Scheduled Tribes was 8.31, the Scheduled Tribe's total number was 66,3,645, the percentage of ST in total enrolment (Class I-V) was 8 52 and the number of ST girls was 2,29,530. The situation becomes grim when one realises that about 45 percent of the total tribal population of Bihar are tribal children.

The State has increased its existing facilities in 1988-89 for improving the enrolment and retention rates of the ST girls and is also in the process of introducing new schemes.

In the districts of Dumka, Sahibganj, Singhbhum, there are residential schools for girls. Nine such schools have 2000 seats. These schools look after food, uniform, books/stationery and medical facilities of the SC/ST girls. The subjects taught are Hindi, English, Maths, Science, Social Studies, Geography, Music. Each school has a library in it

The Social Welfare Department of Bihar also runs hostels for these girls — 50 per cent of the expenditure is met by the Government of India and 50 per cent by the State Government. There are seven schools They have 225 seats in districts Patna, Rohtas, Vaishali, Madhubani, Dumka and Ranchi. In addition to these, there is a sanction for four more hostels in Patna, Rohtas, Munger and Biharsharif districts with 400 seats.

Problems

During the State level workshops organised by the Department of Women's Studies of the National Council of Educational Research and Training in all these States, an attempt was made to identify as to why was it that in spite of increasing facilities, schemes, programmes, scholarships, the Scheduled Tribe girls were not coming to school and even if they came, they did not stay on.

It was felt that the tribals had their problems like shortage of arable land, small agricultural holdings — they had very low economic standards, lack of means of communication, they did not want to come out of their 'obsolete customs', they had the problems of debts and that they were being exploited. These held back both boys and girls from schools.

It was generally felt that the female education in the tribal areas was bad because of the absence of female teachers, absence of local role models, lack of motivation among parents. Parents' support is important because not only will they send their girls to schools, but their support to the girls in regard to their education would help them to do better

This went on to prove, to some extent, that it was not just due to economic reasons that tribal girls were not coming to schools, but it was due to the fact that the tribals do not consider education as their first level priority.

The girls were not coming to schools because they had also became economic units in their families — they were either working in the fields, taking cattle for grazing, looking after their younger brothers and sisters while their mothers went out to work, working in the local markets to make money. While most held the parents responsible for not sending daughters to school, many blamed the local contractors for exploiting the girls/boys and not letting them come to schools.

The societal bias against the SC/ST girls also discouraged them for coming to school. The ST girls did not want to leave their colourful dresses initially, but they began wearing the uniforms provided to them by the schools to save themselves from being spotted out. When the school accepted these girls, their societies/communities made them realise that they were going against their culture. The problem of Scheduled Tribes appears to be essentially social and cultural and their economic problem is its by-product.

The tribal girls stay away from schools because they do not find their studies interesting. Very few books have something about their culture and history. The medium of instruction is coming in the way of promotion of education among ST girls. Article 350A expects every local authority to provide adequate facilities for instruction in the mother tongue at the primary stage. If one made an effort to find out the local history of the tribes, one would not miss the fact that the tribes are in love with their local dialects There seems to be little understanding of what local dialect means to a tribal. This can be illustrated through a case from Mizo Hills. It was because of the economic constraints that the local mission stopped printing the Bible in the Lakher dialect The Lakhers reacted sharply. Their choice was for their own dialect and not Christianity. It must be pointed out here that the Central Institute of Indian Languages in Mysore is working on 52 tribal languages — it is bringing out primers. The NCERT is also preparing textbooks and supplementary reading materials for the tribals

Strategies

Before anything is planned for the Schedule Tribes either for economic development or for promotion of education, the lessons from their history will have to be kept in mind. History has proved that they react sharply whenever they find that something is imposed on them. Most of the tribal societies are traditional societies and they often resist change Whenever programmes/schemes are made for them, whenever strategies are to be planned for the Scheduled Tribes, the best way to ensure effective implementation of the schemes is to involve them at every stage, get their sanction/approval and then to get a feedback from them. Unless this is done, the existing gap in the institutionalisation of schemes/programmes will not lead to internalisation by the tribal society. The education for all suggests involvement of tribal communities from the beginning — right from the identification of problems, in the planning of education and also in its management. Micro planning with the involvement of tribes is a pre-requisite. A meaningful participation would help If 'Planning on Location' will ensure implementation of schemes/programmes for the education of tribal girls/boys. Another point that goes in favour of education of tribal girls is that girls are not 'unwanted', they participate fully in the economic life of the family. Only if education is related to their needs would there be a positive response to girls' education The following strategies could help in the promotion of education of tribal boys and girls:

1. Rajasthan's projects like Shiksha Karmi

and Saghan Shiksha could be tried out in other states as well.

2. Till the number of trained female teachers becomes adequate, the wives of male teachers could be involved. The presence of a woman in schools would add to the confidence of the parents.
3. The medium of instruction till the primary stage should be in their local dialect
4. Textbooks must be made more interesting — these must have lessons on tribal life, culture, biographies of local heros/heroines. These subjects should also be included in general textbooks to enable the tribals and non-tribals to understand each other.
5. Education must be meaningfully linked/related to actual issues — there has been a positive response to Bihar's Grahini Prashikshan Karyakram for tribal girls. This could be tried out in other states. The problem of absenteesm is lower in scheduled tribe girls — the schools could make them economically independent by teaching vocational skills
6. Curriculum should be work-oriented, broad-based — local handicrafts should be encouraged and marketed. The children will be able to 'earn while they learn' and their parents will also not grudge their going to schools.
7. Workshops should be held at the district levels in tribal and pre-dominantly scheduled caste areas to enable local grassroots workers to give practical suggestions
8. Scheduled tribe girls are excellent in sports—schools must have adequate sports facilities.
9. Publicity should be made about the existing facilities.
10. Number of schools should be increased and these schools should be localised particularly in tribal areas.
11. Non-formal centres should be made functional.
12. Tribal social institutions like Bihar's Palerpa (for girls) and Dhumkuria (for boys) and Madhya Pradesh's Ghotul could be used for educating the girls.

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Student Unrest Related to Teacher Unrest : The Present Anchored in the Past

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STUDENTS' present discontent and consequent indiscipline may be traced to the past. A discerning investigation into the past — into the Hindu, Buddhist, Mohammedan and British periods in India — may consistently unravel the sad plight students were put to It is only as a reaction to the unbroken chain of denials, throughout the centuries, of what was due to them — their rights, self-image, status and independence — that they appear to have decided no longer to repose blind faith in their teachers and that they, very much conscious of their powers and position by now, have manifestly started defending their own interests whenever in jeopardy, sometimes overriding the authority of their teachers so long consisting in authoritarian treatments of students at their hands.

In order to undertake such a study one is required to critically inquire into the historical perspectives while delving deep into the interactions between teachers and students throughout the whole span of history under reference. Attempts have accordingly been made to understand students in their relation and reaction to their gurus or teachers from the Vedic down to the present times and also to examine whether the authoritarian attitudes of their teachers down the ages have consequently driven them to behave as they do at present in relation to their teachers and others.

I

Teacher-student relation was very close and cordial in the Rigvedic as well as in the latter Vedic times, in the times of the Mahabharata as well as in the times of the Ramayana and in the Buddhist as well as in the Mohammedan times. The educational centres, particularly in the Vedic and the Buddhist times, were residential and both the teacher and the taught lived together to teach and to learn mainly Vedas in the Hindu centres, Buddhism in the Buddhist centres and the Koran in the Mohammedan centres of learning. This living together of students and teachers contributed most to the close relation between them.

Hindu System of Education

In the Vedic times as also in the times of the Epics, students used to come to the teachers' home to reside with them as members of their families for a number of years to learn Vedas and other subjects in return for their service to the teacher The relation existing between the teacher and the student, it was claimed, well compared to that existing between father and son. After the 'upanayan' the teacher became the intellectual father while the student attained second birth and was called 'dwija'.

Under the Hindu teachers, mostly Brahmins, curriculum included not only the study of the Vedas and other subjects but also moral and physical education Utmost importance has given to the building of character and that necessitated the constant guidance of the teacher The personal touch of the teacher was very important. "Unless the acharya took a real paternal interest in his pupil, he would not be able to weild a deep moral influence upon him; and, therefore, to that extent, he would also be unable to mould his character properly" (Prabhu.1961,118) The building of a 'man' out of a student required the human factor and the students appeared to find that in the person of the teacher. The personal life of the teacher was more educative than anything else The students found or expected to find in the teacher an ideal man, whom they could emulate to their maximum benefit "Director, personal and continuous contact with a teacher of noble character naturally produces great effect on the mind of the scholar during the pliable period of childhood and adolescence" (Altekar:1948,32). This personal touch of the teacher dominated the whole of Brahmanical education of the Gurukula system in the Vedic and latter times

It was not only the moral side of life but also the intellectual side of life of the student that received sufficient attention of the educators. "...the teacher's duty under the Hindu system of education was to help to cultivate the moral culture of his pupil along with his intellectual culture" (Prabhu 1961, 129).

What distinguished the ancient Hindu system of education from other systems was its individual, and not collective, attention to the students. Under this system, centres of education were single-teacher institutions where singleness of the number of teacher per institution limited the number of students And that ensured closer relation between the teacher and the student. "The pupil belongs to the teacher and not to an institution" (Mookherjee.1960, xxvii)

In the Upanishads also, one comes accross a close and cordial relation of the teacher with the student Special mention may be made of the Kena and the Katha Upanishads The first two parts of the Kena Upanishad are in the form of a dialogue and discussion between a teacher and a student Here the student was allowed to ask as many questions as he liked until he was satisfied

The same tradition of close teacher-student relation was found in the Mahabharata and the Ramayana. One finds in the Mahabharata an intimate relation between Dronacharya and the Kaurav Princes and between Parsuram and Karna, in the Ramayana between Viswamitra and the sons of King Dasarath, in the Raghuvansa between Vasistha and his pupils

Buddhist System of Education

Under the Buddhist system of education profoundly influenced by the Hindu system, one finds more or less the same close teacher-student relation though in a changed situation The relation there was not as intimate as under the Hindu system principally because of the institutional difference. The Hindu centres of education were single-teacher institutions which greatly limited the number of students while, under the Buddhist system, centres of education were of corporate nature, including many teachers and many students in each centre called vihar or monastery.

Nonetheless, the relation there was close because the method of teaching was mostly tutorial followed by discussion and even lectures for students failing to understand particular lessons. "The old and the young mutually help one another", said Hiuen Tsiang (Sankalia;1972, 171) Hiuen Tsiang himself learnt yogasutra from Silabhadra and many other things from teachers of repute including Jaya Sena in the same manner The personal relation between the student and the teacher is also confirmed when Sankalia says· "Even these lectures very often took the shape of personal discussion between the teacher and the student who could not follow the lecture or had some doubts regarding some topics in the lecture" (Sankalia·1972,172)

Mohammedan System of Education

The teacher-student relation under the Mohammedan system of education built upon demolishing the Hindu and Buddhist seats of learning, was also intimate. "The monitorial system" in which the more advanced students were associated with teachers in the task of teaching, was a special feature of Indian education and it was in use in Mohammedan as well as in Hindu centres of learning (Keay:1954,110).

It is thus clear that intimate relation of the teacher with his student was the sine qua non of the Hindu, Buddhist and even Mohammedan system of education in Vedic, Buddhist and Mohammedan times — in ancient and medieval periods.

Setback to the Close Relation

But, gradually the intimate relation of the teacher with his student as found in the Vedic times and later received a setback because of the increasingly felt need of accommodating a greater number of students with the passage of time and the emergence of new socio-economic conditions

In the Vedic times and still later the number of students was very small and the number of teachers, quite naturally, much smaller. The small number of students in the Vedic times and later might be attributed, inter alia, to caste, illiteracy among the parents, poverty, small population and so forth Sons of only the upper three castes were admitted for education. Sudras were excluded. But as time passed, conditions turned favourable to the spread of education among the people and the Gurukal systems yeiled places to regular institutions, very clearly in evidence in the Buddhist times and later And such regular institutions as the Universities of Takshashila in ancient India, Nalanda, Benaras, Ballavi and Vikramshilla in the medieval India appeared. The famous Panini, Jeevaka, the renowned court physician of Bimbisara, were students of Takshashila. There is a tradition connecting Kautilya with this University. Nalanda, the greatest university of the medieval world, had at its height of glory, one thousand teachers and ten thousand students (Basu:1944,10). Dharmapala, Dipankara, Jinamitra, Shilabhadra, Prabhakaramati and others, some of the most famous scholars, were connected with Nalanda University. Vikramshila is said to have included one hundred and seven temples and six colleges (Keay 1954, 151).

Institutional arrangements for imparting education were in evidence also under the Mohammedan system of education, Muktabs, lower seats of learning, attached to mosques, and Madrasah, higher seats of learning, often attached to mosques, were found to exist catering to the needs of education and learning. Firoz Tughluq's madrasah, a magnificant building covering an extensive area and having many lecture rooms, was established in 1352. There were a mosque and some hostels attached to it with quarters for the Imams and other servants of the mosque. There were many teachers of repute including Maulana Jalal-un-din Rumi, its principal (Srivastava·1964,101).

It is conceivable that, under the above institutional arrangements, the close teacher-student relation as envisaged under the Brahmnical' system of education in Vedic times and still later, was not gradually possible because of the need—in accommodating greater number of students of meeting the new conditions of life and time.

Yet, it must be admitted that the ancient Indian ideal of intimate student-teacher relation did not lose its significance and value. Inspite of enlargement of the educational institutions, efforts were constantly made to practise and propagate the ideal of teacher-student relation as it was deemed to be the most important condition of teaching and learning.

Practice, Not Theory

Attempts may now be made to deal with the question as to how far the teacher-student relation was close and cordial not in theory but in practice

Admittedly, it is true that intimate teacher-student relation was an ideal particularly in the Hindu centres of education since the earliest Vedic times until the British take-over of them in the early 19th century with the Minute of Macauley being approved by Lord William Bentinck, the then Governor-General "One of the most characteristics of Indian educational ideals is the relation between pupil and teacher" (Keay:1954, 190). It was the ideal. How far was it carried into practice ?

If one judges the relation from the point of view of students particularly in the background of the Rules of Respect due to the teacher from the student, one may envisage a clear tilt in the relation towards the teacher. It was relation prominently marked by superordination and subordination.

A brief reference may be made to the rules of respect due from the students to the teachers to substantiate the point. "There are rules regulating the behaviour of the student towards his teacher. He must always obey his teacher except when ordered to commit crimes which cause loss of caste. He must not contradict him. He must occupy a couch or seat lower than that of his teacher When he meets his teacher after sunrise (coming-for his lessons), he shall embrace his feet, and shall study, after having been called by the teacher, and not request the teacher to begin the lesson...He must approach his teacher with the same reverence as a deity" (Mookherjee:1960, 88).

He was also required to beg alms daily for himself and his teacher, tend teacher's cattle, sweep the floor of the teacher or the place of sacred fire, massage the body of the teacher and a number of other similar duties to please the teacher.

It is said that, in the times of the Epics, a student maintaining himself on the proceeds of his begging and not depending on the teacher was commended. He was also urged to perform all the acts desired by the teacher even at the cost of his life. This devotion should also be observed towards the wife, son and other relatives of the teacher" (Mookherjee : 1960, 331).

Reflections over the three passages above may make it abundantly clear that the relation between the student and the teacher resembled that between gods and ordinary human beings and surely not that between man and man or what may be called human relation. There the teacher was worshiped as a god. "The idea of the relationship of pupil to teacher has indeed been some times so developed that it has led to the teacher, or guru, receiving divine honours from his pupil" (Keay:1954, 190-191).

How could there be a very close and cordial teacher-student relation when the teacher was treated to be a god and the student to be an ordinary mortal, when the teacher was always to be obeyed and never contradicted or when the teacher was always to order and the student was always to carry out the orders unquestioningly ? It was a relation marked by inordinate respect and obedience to the teacher by the student and an excessive regulation of the student by the teacher.

It is very much clear that teachers — the Hindu teachers in particular — were authoritarian in their relation to the students because of a number of causes degrading much down the position of the students and exalting much high the position of the teacher. The causes may be enumerated and elaborated as below.

1. In the general absence of any cash-nexus between the teacher and the student, the custom requiring the students to reside with the teacher at his home for years together generated in the minds of the students a feeling of excessive indebtedness towards the teachers.
2. Consciousness of this fact led the teachers to more and more regulation of the students and, in the process, becoming more and more authoritarian in their relation to the students.
3. The teachers were averse to inculcating a sense of self-respect in the minds of the students probably fearing that, that might act as boomerang. It appeared to be a conscious attempt to perpetuate their authority under the students The students were made aware only of their duties and never of their rights.
4. The teachers were deemed to be the go-between, between gods and men called the students. This boosted up the position of the teacher and degraded that of the student further down.
5. Vedas were regarded to be the repository of all knowledge and the teachers alone were thought to be able and fit to interprete and communicate the Vedas to the ordinary people including the students. No individuals and original thinking was encouraged. Everything had to be justified with a reference to the Veda thought to be the root of all knowledge Anyone doubting the authenticity of the Veda was dubbed nihilist or atheist (Chaudhury·1967, 46-49).
6. The oral method of teaching, then in vogue, gave the teacher "a monopoly of the book deliberately kept unwritten" (Kosambi· 1975, 86-87) ad "education was entirely under the control of the priestly class" (Apte,1965, 520). It gave the teacher "a matchless prestige among the people ... Briefly, it made them [the Brahmins] into a class and a powerful one who influenced later Indian history" (Kosambi:1975,86-87).".... it became the monopoly of a special class of persons who could, exclude and include others in this class quite arbitrarily" (Chaudhury:1967, 46-49).
7. As is already referred to above, there was no cash-nexus between the teacher and the student. But this does not mean that the teachers were economically poor. The force of the custom was such that every one, on completing his studies, had to make presents to the teacher according to his ability. Those presents ranged from vegetables or umbrellas to fields, cattle, gold and other costly things. Majority of students were poor and naturally they could not make costly presents. But these students had to work hard at the teacher's home in begging alms, tending cattle, massaging the teacher's body or even sweeping the floors. They worked all day and received instructions from their teacher at the evening. But the rich students — sons of royal families, merchants and other rich people — often paid the whole of their charges in advance (Mookherjee :

1965,592) and were given preferential treatment in so far as they were not required to beg or tend the cattle or do other menial chores for the teachers. The teachers received much costly presents from those rich boys and were thus able to have their positions further elevated This did play no small a part in raising the status of the teacher vis-a-vis the students, particularly the poor ones.

8. The deep entrenched feeling of caste of the Hindu teachers always debarred the Sudras from the portals of the temples of learning. The theory of caste was broadly based on the fragmentation of humanity in different graded categories of people — some placed high and some low in the society. It was one way of heightening the position of the Brahmins (the teachers being mostly Brahmins) in relation to the students and the non- Brahmin people.

Thus the past is not that rosy as people are usually want to paint. It is human frailty that men, out of their excessive respect (bordering on blind respect) to the past, regard everything in the past as good and ideal while turning blind eyes to its faults (Jencks and Riesman·1972, 35)

Teacher and Student : Good and Bad

It is not denied that there were eminent and ideal teachers (Sarmah· 1978,109-122) with profound scholarship, honesty and integrity, love for their students as sons and regards for the people as a whole. There were also good and brilliant students. Relation between such teachers and students will always serve as an illuminating example for the teachers and the students down the ages of Indian history. But this was not all. There was another side which was much disappointing and gloomy. There were also many unworthy teachers some of whom even lacked in character and integrity There were unworthy students as well. Relation between such teachers and students can be better imagined than described.

"Unworthy pupils and teachers were not unknown. Some pupils found study too painful and difficult and abstained. Sometimes the rough manners of the teacher might also repel them" (Mookherjee·1960, 236-237). Mookherjee also confirmed that "there was not always the pursuit of knowledge for its own sake and deviations from the ideal were common or general that specific epithets were evolved" (Mookherjee.1965, 583).

Historian Sarkar provides a stunning information when he says that "the Vedic teachers were not above the charms of wealth" and also "the temptations of the fair sex" (Sarkar· 1976, 30-31). There is a considerable amount of evidence in both the Vedic and the Epic-Puranic literature of their uncontrolled sex-relations which reacted on their wives and students

Comparison with the Buddhist Teachers

Inspite of the fact that Buddhist rules of respect (Ghoshal·1965, 584-585) due from the students to the teachers were almost identical with the Hindu rules of respect, one finds the Buddhist teachers much less authoritarian and avid than Hindu teachers in so far as:

1. Both the Buddhist teachers and students lived in monasteries away from their homes while the Hindu teachers lived in their own homes and often with their families but the Hindu students had to live at the homes of their teachers

2 Both of them (Buddhist teachers and students) got out together for begging alms but a Hindu teacher was never heard of going out for alms, alone or with students, but a Hindu student had to beg to provide for his own food, etc. as well as to help his teachers

3. The Buddhist teachers had no material property of their own while the Hindu

teachers had material property of their own — their homes, cattle, fields, gold etc

4. The Buddhist students were under no obligation to make presents to their teachers on completion of their studies while the Hindu students were required by custom, an unwritten law, to make presents to their teachers to please them according to their abilities. Presents often happened to be very costly, especially when given by the sons of kings, merchants and other rich people.
5. The Buddhist teachers were not inhibited by any caste feelings while the Hindu teachers were inhibited by feelings of caste and creed.

Strength of the Hindu System

The Hindu system of education was much more rigid than the Buddhist system. The Hindu system survived the Mohammedan invasion and regained its past glory to a large extent while the Buddhist system disappeared from India following the invasion. The Hindu system is much more pervasive and permanent than the Buddhist or the Muslim system of education in its impact upon the educational centres particularly on their teachers up to the present time

The Muslim teachers at Muktabs and at Madrasahas could not be as assertive as their Hindu counterparts because of two principal reasons·

1. Maulavis at the lower seats of learning were very much dependent upon the families whose children they taught and
2. Ulamas at the higher seats of learning were also much controlled by the state (Srivastava 1964, 102).

II

The type of student-teacher relation found in ancient and medieval India was not found in British India. The predominant feature of the period was the European versus the Indian or the ruler versus the ruled. Indians were to obey and Europeans to order The colonial character was very much manifest in every walk of life The educational sphere could not remain free from the long arms of the colonial octopus.

Race: The Spring-board of Discrimination

Indian teachers were not at all much honoured people in the Indian educational centers, high or low. It was the European teacher who counted and was much respected not because he was a scholar but because he was European. Indian teachers, though many of them famous scholars, were always at bay because they were Indians or "natives". Racial difference was the spring-board of all discrimination Europeans were always supposed to be superior while Indians always inferior. Gokhale wrote, for an Inter-racial Problems Conference, a paper in which he said, inter alia, " ... This attitude, this ruling race idea, prevented an appreciation of the capacity or claims of the Indian people. There was no inclination to recognize any form of equality or even near equality" (Sinha. 1966, 142-143).

In 1887, Sir Charles Croft, Director of Public Instruction, liked to see Asutosh Mookherjee, the "promising young mathematician about whom he had heard so much" (Sinha:1966, 8). They met and talked for a long time, Sir Croft was satisfied and offered Asutosh Mookherjee an appointment in the Presidency College. But Asutosh Mookherjee insisted on honourable terms — "the same status and pay as European members of the Education Service" (Sinha:1966, 8). Sir Croft was very much surprised and said : " ... how could you expect the status and pay of European members of the Education Service ? It was an impossible demand"(Sinha:1966, 9).

"Those were days of racial exclusiveness and administrative partiality," wrote Nripendra

Chandra Banerjee (a famous teacher of his time) in his autobiography, "when the best of Indians trained in Europe and recruited to the Educational Service, were always placed below the third rate crass Englishman or Scotchman even from Edinburgh, or Dundu or Aberdeen, not to mention Cambridge or Oxford and London in the Service cadre, and these first-rate men got two-thirds of the salary of the average European, for no other fault than that of colour" (Banerjee:1974, 39).

The vicious discrimination between teachers, under the British rule, most adversely affected the students in their relation to their teachers. They were not trained or taught to honour the teacher as teacher. The prejudice of race was inculcated into their young minds. They too were expected to honour the European teachers more than the Indian teachers because of the supposed racial or status difference.

While writing about the relation between the teacher and the teacher at the Fort William College, Sisir Kumar Das said: "The European teachers controlled the policy and the Indian teachers obeyed the orders. The British teachers in the college were not only inferior to their European counterparts, they were also inferior to their Indian colleagues, in respect of their knowledge of Indian languages. And yet the Indian scholars were not treated at part with the European scholars. That created a silent tension in the academic life of the College of Fort William. The relation between the European and the Indian teacher was not based on academic terms they were not teachers belonging to two different establishments but they belonged to two categories, those of Sahibs and of Munshis. The munshis did their work well for which they were paid and often rewarded but they failed to be creative even when they had the power" (Das:1978,106).

Attitudes of Indian Students

The Indian students, geared up under such a background, could not be generally respectful to the teachers but they had to maintain a facade of respect to them because of the fear of punishment and the prevailing subject-like attitudes to the masters. The European teachers, in general, had no genuine love or sympathy for the Indian students And the Indian students were aware of it. They were brought up in an atmosphere of neglect and indignity. Their consciousness of being treated as subjects or natives hindered them from being spontaneous in the flow of their heartfelt respect towards their teachers — European teachers in particular.

Under the English system of education, the Indian students were gradually losing their Indianness — they were being initiated in an alien culture This fact might have alienated them from the Indian masses and also their Indian teachers but did not bring them close to the European people and teachers There was always a distance, this way or that way, between the teachers and the students.

The students were conscious that their future was not bright, for they were being trained to be clerks or to hold the lower rank of civil service, always to assist the European masters to rule the country — their own country. Schools or colleges were mere factories for producing a loyal second level of leadership in India

One of the basic aims of education, under the English rule, was to raise, out of Indians, a "class of men", in the words of Macaulay, "Indian in blood and colour, but English in tastes, in opinion, in morals and intellect" (Parikh:1959,120). The whole British scheme of education was an exercise in mentally preparing the Indians to accept the British rule for ages. How could the students be whole-heartedly respectful to the teachers who were playing important roles in perpetuating the British cultural imperialism ?

It was the educational or cultural exploitation that, largely, motivated the Indian students to plunge themselves in the Independence Movement and to play the leading roles in achieving independence.

Situation on the Campus

The Britishers were rude and offensive everywhere (Poddar·1977, 2) wherever they came in contact with the Indians, from the streets, to the campus and law was of no avail to Indians. In the words of Netaji Subhas Chandra Bose, "The situation would be aggravated if any Britishers on the college staff were rude or offensive to us," and "unfortunately such instances were not rare. Before my time on several occasions English professors had been thrashed by the students. These stories were carefully chronicled and handed down from generation to generation. During my first year in college I had some personal experiences of them but they were not of a serious nature, though those were enough to stir up bitterness" (Gopal:1978, 53-54).

It is known to many that in 1916 the repeated misbehaviour of Oaten, Professor in English of the Presidency College, Calcutta, towards the Indian students infuriated them so much that they had beaten the professor black and blue, knowing for certain that the principal of the college would not punish the professor. Oaten was not the only Britishers to misbehave with Indian students. There were many more.

Indian students' violent reactions to the offensive behaviour of their European teachers give us enough to estimate the surging hostile mentality of the Indian students towards the European teachers who almost hated the Indian students.

Student-teacher Relation

In general, the student-teacher relation was not warm The European teachers could not love the Indian students while the European students could not respect the Indian teachers. Relation of the students with their teachers of Presidency College and Fort William College well illustrates it.

The relation between the students and the Munshis [Indian teachers] was also partly determined by this tension [tension as referred to above between the European and Indian teachers]. "The students, at least many of them, hardly had any respect for those Munshis and quite a few of them misbehaved with them" (Das.1978, 107).

Three instances (Das:1978,107-109) may be cited where the students of Fort William College insulted and even beaten their Indian teachers on flimsy grounds and when the insulted teachers prayed for justice, the students' offensive behaviour was only condemned without any punishment in the form of expulsion, etc.·

1. In 1806, Inglish, a student, chastised Munshi Nazarullah with a horse-whip after forcibly taking away the chair on which the teacher was seated.
2. In 1810, Ananda Chandra Sharma, a Munshi in Sanskrit-Bengali establishment, was beaten by a student called Kennedy for allegedly being unable to give the meaning of a word. In fact, the meaning given by the teacher did not conform to the wrong meaning given in Foster's dictionary.
3. In the following year, Munshi Gholam Husen was struck on the shoulder with a whip by a student named Collins because the student was vexed by the long and tedious explanation given by the teacher. In a statement Collins wrote, "he was not aware that these people [Indian teachers] were entitled to be considered as gentlemen" (Das:1978, 109).

Respected European Teachers

It has to be noted in this connection that all the European teachers were not haughty and arrogant. There were a few European teachers (like Mc Cann in Mathematics, H.M. Percival' in English, H.R. James and others of Presidency College) whom the Indian students respected and relation with them and their students was harmonious

But the number of such teachers as referred to above was small, too small to stem the general tide of haughty, arrogant and authoritarian attitudes of the teachers — European teachers. The Indian students under the rude and offensive European teachers could not, naturally, feel satisfied Their discontents were smouldering under a cover They could not respect the teachers because of their discriminatory and discourteous behaviour. Yet they had to maintain a show of respect because of the prevailing conditions of society and state. The long continued exploitation of the students found expression in the Indian Independence Movement dragged on from 1905 to 1946. After Independence was won, they had to revert to the classes but much more conscious of their power, rights, duties and self-prestige than ever before (Aikara:1977, 54-55).

III

In the post-independent India, the teacher-student relation started on a new plane — without any racially superior people dominating or dictating a racially inferior people. Nonetheless, there was no basic change to the tone of relation because there was, immediately after Independence, no new set of values emerging. The values ingrained in the Indians under the Europeans for more than a century still began to work and affect the attitudes of the teachers towards their students. The authoritarian and conservative outlook of the teachers continued (Kabir:1958,10). They were not immediately aware that they were dealing with changed students — students who had successfully battled against the Britishers in winning freedom for them and their country, that present students were much more conscious of their power, self-respect, rights and duties, that they should not be dealt with in the same manner as they were dealt with by the European teachers, in the changed perspective and, to deal with them in same way, would prove perilous

But this happened. The students soon started reacting, sometimes violently against their teachers and the whole educational authority. In a foreword dated 28 August 1954 to Humayun Kabir's book *Student Unrest —Causes and Cure* (1958), Jawaharlal Nehru cautioned the people concerned against student indiscipline while narrating a few ugly incidents including those in which the teachers, invigilators and others were humiliated and even beaten by the students Student indiscipline thus started from as early as 1952-53 in Independent India. It assumed alarming proportions gradually.

The imperial power left India in 1947 but the imperial temperament used to obedience and compliance continued to rule the educational centres The teachers used to unquestioning obedience during the British period expected the same conduct from their students even after the end of the British era in India It encouraged conformity to the views of the teachers and discouraged independent thinking (Parikh: 1959, 123).

The students' expectation of sympathetic and humane behaviour from their teachers in Independent India suffered a rude shock. And this again led them to treat their Indian teachers as much in the same way as they treated their European teachers before Independence.

What is clear is that the teachers changed — from Europeans into Indians — but the treatment the students received at the hands of the teachers before and after Independence continued to remain more or less the same.

Conclusion

It emerges clearly, after a study of the teacher-student relation in the historical perspective, that there is a positive link between the past and the present

The authoritarian and self-centred attitudes of the present teachers may be traced to the similar attitudes of the ancient Hindu teachers though structurally modern colleges are better compared with the Buddhist vihars than the Hindu Gurukula systems The teachers of to-day, as those of the past, expect too much respect from their students while themselves remaining blind to the students' natural expectations from them From the hoary past to the present, the teachers were what they are to-day with, of course, periodic breaks under some extraneous pressure but when the Indian teachers could not be authoritarian, others could. The chain, however, remains unbroken. The British period was one such period when the Indian teachers failed to assert in their relation to their students because they were the subjugated people. But the teachers were assertive or authoritarian, not the Indian teachers but the European (British in particular) teachers.

The present protesting spree, restlessness, loss of respect to teachers, among others, are but reactions to the injustices, through the centuries, done to the mute students made aware only of their duties and not of their rights. Centuries of deprivations of what were due to them, have very naturally awakened them to defend their own interests against the onslaughts from others including their teachers

Post-independence students, much conscious of their power and of a strong sense of their rights, so long neglected, now easily protest against any action from the teachers and others, which they consider wrong or unjustified. So long, the students feared the authority but, now, the time has come when the authority has come to fear the students (Iyengar:1971, 213).

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Organizational Climate in Schools

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THE atmosphere in which the school conducts itself is technically known as its organizational climate. The psycho-emotional environment in which the process of education takes place in schools speaks for their organizational climates. It is this climate which can be found conducive for the teachers to teach and the students may also feel like learning in it. The other side of the coin is that school organizational climate may work to develop an apathy in the minds of the teachers for teaching and at the same time it can prove to be instrumental in creating a distaste for learning in the minds of the learners. It may be said that organizational climate projects the nature of a teaching-learning situation that is believed to prevail in a school.

Sharma (1971) has reported that there was a significant positive relationship between organizational climate and school academic index. However, Amarnath (1980) has concluded that there was no positive relationship between organizational climate and academic achievement of the students Till date, Pradhan (1990) has come to record that the students' academic achievement bears a significant and positive coefficient of correlation whereas their creativity and patterns of adjustments have no significant relationship with school organizational climate.

Gandhi (1977), Gupta (1978), Adisar (1978), Bisht (1980), Rastogi (1981), and Shah (1980) have made correlational studies of school climate with other variables like headmasters' behaviour, personality of teachers, self-concept and socio-economic status of students. The researchers, in their findings, do not seem to be in perfect conformity with each other. The author feels the primary need of analysing the school organizational climate as such. The present study is an attempt in this direction

Sample

The study included 410 students of Class X (226 boys and 184 girls) of four schools.

The schools included in this study have a distinction of their own among the community of schools of the society The schools I, II and III come under three different organizations of the Government of India. School IV is run by an

Missionary organization. The first three schools are considered to be well financed and taken care of by the Central Government. The fourth school is run by public donations and students' payments towards their fee accounts. With their different governing bodies at the helm of affairs and with their separate charters of objectives, each of these four schools is considered to have a unique personality of its own.

Tool

In such like studies, researchers have mostly used the available Organizational Climate Description Questionnaire, OCDQ, prepared by Halpin and Croft (1963) in its original or modified form. The author was, however, not satisfied with this popular tool for the purpose of the present study He, therefore, developed at his own a School Organizational Climate Inventory for the collection of data for this study

The School Organizational Climate (SOC) Inventory is a Likert type Inventory. It has 100 statements (50 +ive and 50 -ive). Students, teachers, principal, administration and services/facilities available in a school are considered to be the generators of school organizational climate. Each of the five generators of SOC has been illustrated with 20 (10 +ive and 10 - ive) statements. Reliability and validity of the Inventory has been duly established.

The SOC Inventory is applicable on students, teachers and principal. The Inventory studies the school organizational climate as is perceived by these three main architects of school climate Each statement carries a weightage of four and the Inventory as such carries a maximum score of 400 which is further distributed over to five generators of climate with equal weightage of 80 for each of these dimensions.

Analysis and Interpretations

The Inventory carries a maximum score of 400 that measures the desirable school organizational climate in its level of perfect perfection Keeping this 400 score as an index of 100 per cent desirable organizational climate, the level of actually prevailing desirable organizational climate in a school can be evaluated in terms of its percentage as ·

$$\text{Desirable SOC} = \frac{\text{TOTAL MEAN SCORE ON SOC INVENTORY}}{400} \times 100$$

Let us examine the level of desirable SOC prevailing in our sample schools

The total scores of organizational climate in four schools individually as well as collectively are found to follow a pattern of normal distribution. That permits us to interpret Table 1 as follows .

TABLE I

Values of Central Tendency, SD and Levels of Desirable School Organizational Climate Prevailing in Four Schools

School	N	Mean	Median	Mode	SD	Level of SOC
I	94	259 92	269.97	290 07	43 64	64.98%
II	88	296 54	298.54	302.54	33 19	74 13%
III	101	213.46	211.24	206 80	47.52	53 36%
IV	127	275 85	375 67	277.31	38 82	68.71%
Total	410	260 97	269.78	287.40	50.83	65 24%

School II with 74.13 per cent and School II with 53.36 per cent desirable organizational climates give us the maximum and minimum limits of the quality of desirable organizational climate prevailing in four schools included in this study.

Table 1 shows that different levels of desirable organizational climates prevail in each of the four schools. It has been found that mean values of school organizational climates differ significantly with respect to each other. The 't' values in between mean scores of SOCs of schools have been found as : School I vs, School II,III,IV as 6.40, 6.97, 2.63; School II vs School III, IV as 14.08, 4.40; School III vs School IV as 10.40. It can be said that there is a significant difference between the average levels of desirable organizational climate in four schools School II gives the best of SOC to the desirable level of 74.13 per cent which is significantly better than the rest of three schools. School IV having 68 71 per cent level of desirable organizational climate is definitely better than the climate prevailing in Schools I and III Lastly, School I has better quality of organizational climate than that of school III only. It may be concluded that school III with only 53.36 percent level of its desirable organizational climate significantly falls below the levels of climates (desirable) prevailing in schools I, II and IV.

2. Number of Students, Perceiving Their School Organizational Climate as Very Good, Good, Average, Poor and Very Poor Quality

As against 100 per cent level of desirable organizational climates in schools, we have found that actually in the four schools of this study, it exists to the levels of 64.98, 74.13, 53 36 and 68.71 per cent only. Here it is being examined as to how many students perceive the organizational climates of their schools as very good, good, average, poor and very poor This classification has been visualized on the principle of continuum on a linear scale.

Quality of SOC	*Range of Score on SOC Inventory*
1 Very good	80% and above
2. Good	60 to 79%
3 Average	40 to 59%
4. Poor	20 to 39%
5 Very poor	up to 19%

On the basis of the above classification, we arrive at the following table.

TABLE 2

Number of Students Perceiving the School Organizational Climate of Their Schools as Very Good, Good, Average, Poor and Very Poor Quality

	SCHOOLS				
Organization Climate	I	II	III	IV	Total
Very good	4(4.25)	24(27 27)	1(1.00)	15(11 81)	44(10 73)
Good	64(68 08)	60(68.18)	29(28.71)	94(74.01)	247(60 24)
Average	24(25 30)	4(4.54)	55(54.45)	17(13.38)	100(24.39)
Poor	2(2 12)	00	16(15 84)	1(.30)	19(4 64)
Very poor	00	00	00	00	00

In school II, there are 4(4.54 per cent) students who perceive the climate in their school as of average quality whereas the rest of 84(95 46 per cent) students find this organizational climate as very good (27.27 per cent) and good (68.18 per cent) On the other hand, in school III, there are only 29(28.71 per cent) and 1(1% per cent) students who perceive their school organizational climate as good and very good. Table 2 reveals that more than 70 per cent students of school III, do not find the organizational climate of their school good at all And there are also 16(15 84 per cent) students of this school find their organizational climate as of even poor quality That way, School II and School III present a very contrasting number of students perceiving their school climate as of very good, good, average and poor quality.

School IV claims a better climate than School I. In School IV, 94 (74 per cent) and 15 (11.81 per cent) students perceive the climate in their school as good and very good whereas there are only 4 (4 25 per cent) and 64(68.08 per cent) students in School I who characterise the organizational climate prevailing in their schools as very good and good, respectively However, School II still gives more number of students who find their school climate better than that found by the number of students of School IV

It is but very essential that for an effective process of education to run, school organizational climate needs to be very good and it should also be perceived as such by all students When in reality, the things are not found as desired, this may be examined as under

3 Contribution of Students, Teachers, Principal, Administration and Services Towards the Development of Desirable School Organizational Climate

The SOC Inventory attributes a maximum score of 80 to record the contribution of students, teachers, principal, administration and services towards the development of desirable organizational climates in their respective schools How do these generators (Dimensions) of school organizational climate (SOC) differ in themselves in their respective schools in their contribution may be examined as below.

TABLE 3

Significance of Difference Between the Mean Scores of Students, Teachers, Principal, Administration and Services as Their Contribution Towards the Development of Desirable Climates in Schools

School	Generators	Mean	SD	t Values Between the Means			
				II	III	IV	V
I	Students	51 36	9 46	.18	3 38	.41	25
	Teachers	51.15	6 57		4 00	.30	.13
	Principal	56.47	11.15			3.42	3 47
	Administration	50.72	11 96				.16
	Services	50 99	10 56				
II	Students	57.22	8 52	.78	2 99	3 00	3 64
	Teachers	56.32	6 57		4 34	4 31	4.95
	Principal	60.75	7.04			05	82
	Administration	60 80	7.18				
	Services	61 66	7 67				

III	Students	41.21	12.49	1.55	1.13	38	1.55
	Teachers	43.88	10.23		37	1.17	.19
	Principal	43.29	10.80			80	51
	Administration	41.90	12.08				1.21
	Services	44.23	13.33				
IV	Students	51.25	8.37	5.94	4.66	7.13	34
	Teachers	57.31	7.88		68	1.35	5.32
	Principal	56.56	9.70			1.71	4.35
	Administration	58.45	7.78				6.25
	Services	50.82	11.35				

An interesting phenomenon is revealed from Table 3. In School III where the desirable organizational climate has been found to be only 53.36 per cent — the lowest one as compared to other three schools — the five generators of this climate make no significant difference among themselves in respect of their contributions. In School II where the desirable organizational climate is found to be 74.13 percent — the maximum one — it is noticed that principal, administration and services in themselves make an equal contribution which is significantly more than the almost equal contribution made by the students and the teachers in this school. Similarly, in School I, it is found that the principal makes a significantly more contribution towards the development of desirable school organizational climate as against almost the same amount of contribution being made by the rest of four generators of climate in this school In School IV, the teachers, principal and administration contributes significantly more towards the creation of desirable organizational climate than what is being made by the students and services at the same level.

One common element that emerges from the above discussion is that in Schools I, II and IV, their principals have never been left behind any of the other four generators of organizational climates. That justifies to say that principal as the captain of the ship of the school must take a lead in showing the path and set an example before the students and the teachers to play their role as effectively as is expected from them in the development of desirable organizational climate in schools In our sample, the principal of School II lags nowhere behind and the principal of School III surpasses none of the generators of organizational climates.

TABLE 4

Significance of Difference Between the Mean Scores Attributed to the Contributions Made By Students, Teachers, Principal, Administration and Services Towards the Development of School Organizational Climates

Contributors	School	Mean	SD	t Values Between the Schools 2	3	4
1 Students	I	51.36	9.46	4.40	6.42	08*
	II	57.22	8.52		10.36	5.10
	III	42.21	12.49			6.92
	IV	51.25	8.37			

2 Teachers	I	51 15	9.29	4 38	5 23	5 22
	II	56 32	6.57		10 11	1 10*
	III	43 88	10 23			10 91
	IV	57.31	7 88			
3. Principal	I	56 47	11 15	2.38*	8.39	06*
	II	60 75	7.04		13 33	3 67
	III	43 29	10 80			9.61
	IV	56 56	9 70			
4 Administration	I	50.72	11.96	6.95	5 12	5.48
	II	60.80	7 18		13 31	2.28
	III	41 90	12 08			11 99
	IV	58.45	7 78			
5. Services	I	50 99	10.56	7.84	3 95	.11*
	II	61 66	7 67		6 95	8 40
	III	44.23	13 33			3 96
	IV	50 82	11 35			

4. A Comparison of the Contributions Made by the Students, Teachers, Principal, Administration and Services in a School Towards the Development of its Desirable Organizational Climate

From Table 4 it may be found that out of 30 values of t, only four are not significant.

From Table 1, it may be recollected that levels of desirable organizational climate differs significantly from school to school in respect of all the four schools included in this study. Here, in Table 4, the significant values of t show that each one of the five generators of school organizational climate differs significantly in their contributions from school to school. In other words, as a whole, all the generators of organizational climates count towards the significant difference which is found to exist in the levels of desirable organizational climates in the four schools of this study In practical implications, it may be said that the students, teachers, principal, administration and services available in schools need to be geared up in unison to achieve the maximum level of desirable organizational climates in one and all schools.

TABLE 5

Matrix of the Coefficient of Correlations Between the Scores of Five Generators of School Organizational Climate as Perceived by 188 Students

Generators	I	II	III	IV	V	Total
1. Students		63	.62	.69	.45	78
2 Teachers			50	.68	55	.78
3 Principal				.69	62	83
4. Administration					.67	.89
5 Services						78

5. Correlation Between the Contribution Made by the Students, Teachers, Principal, Administration and Services in a School Towards the Development of its Desirable Organizational Climate

It may be interpreted from Table 5 that there is a significant positive correlation between the contributions made by the students, teachers, principal, administration and services of the school towards the development of its desirable organizational climate

Highlights of the Study

1. Adequately financed by the Central Government and acclaimed to be the best schools by the people, as against 100 per cent, three schools I, II and III have 64 98 per cent, 74.13 per cent and 53 36 per cent levels of desirable organizational climates, respectively. This gives rise to an anxiety to think of the healthy teaching-learning situations that might be prevailing in the majority of schools in the mainstream of the society. It needs to be promptly looked into in the interest of running an effective system of education in the country as a whole.
2. Self-financed and managed by a Missionary organization, School IV claims to have 67 71 per cent level of desirable organizational climate. Such like privately-governed institutions need be encouraged to serve the cause of man-building in the society.
3. There is a close positive relationship between the roles played by the students, teachers, principal, administration and services available in the school to develop its desirable organizational climate It follows that eventually all the five generators of school climate are responsible for the existing level of healthy teaching-learning situation that is believed to be prevailing in a concerned school. It is very much warranted that the students, teachers and principal should make a well-coordinated and concerted effort towards the achievement of a maximum of desirable organizational climate in their respective schools.
4. The principal of a school is expected to play a pivotal role in the generation of a conducive and congenial teaching-learning situation in the school The principal with his administration must act as a pace-setter and should be second to none in the development of desirable organizational climate in his school

The quality of education depends upon the quality of prevailing organizational climates in schools Creation of healthy teaching-learning situations in schools as a first and foremost step means to abide by 'Well begun is half done' Unfortunately, even when all the concerned people are really concerned over the state of affairs prevailing in schools, nothing very substantial seems being done to bring about a cognisable improvement in this situation. A momentous movement needs to be launched for the development of an optimum level of desirable organizational climates in our schools.

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Value-patterns of Teachers Who Undergo In-service Training through Distance Education Programme of the Annamalai University

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THE importance of values in human life and existence need not be overemphasized. One's behaviour totally depends on the values one cherishes Under normal circumstances, one's choice of a profession is decided by one's values One's interest in a profession, too, is influenced by the same. Therefore, if one is to become an effective teacher, one should possess the required set of values that go to the making of a good and an effective teacher Therefore there is every need to investigate the value-patterns of the teachers.

Singh (1974) found that the teachers scored the highest on social and theoretical values and the lowest on economic and political values. He further found that the age of the teachers caused significant differences among them in respect of their religious and political values and they differed in their value orientation on the basis of the subjects they taught. Patel (1979) found that on social, political, economic and religious values, the older teachers scored significantly higher than the younger teachers, while on aesthetic and democratic values, the younger teachers scored significantly higher than the older teachers. But he found no significant difference between them in respect of theoretical, ethical, philosophical and scientific values. He further found that on religious and aesthetic values, the women teachers scored higher than the men teachers, while on political value, the men teachers scored higher than the women teachers. But it was found by Kumari (1981) that the men teachers scored better points on aesthetic, political and social values than the women teachers, while both of them expressed high preference for the theoretical value Thus the sex seems to affect value patterns and so also age Bhushan (1979), too, found significant differences between prospective men and women teachers in respect of certain instrumental values But according to Kundu (1982), the profile analysis of sex variables failed to show significant difference in value patterns In one interesting study, Raj (1981) found that Indian teachers are better than their Ethiopian counterparts in respect of religious value It is generally believed that the values of the teachers influence the values of their wards But De (1974) found no significant relation between the values of the teachers and their pupils.

In the present study the value-patterns of the teachers, who undergo in-service training in the Directorate of Distance Education, Annamalai University, as related to their sex, age and the subjects they teach in schools are investigated.

Objectives

The objectives of the present investigation were as follows

1. To find out if there was any significant difference between men and women teachers in respect of the six values, viz Theoretical, Economic, Aesthetic, Social, Political and Religious.
2 To find out if there was any significant difference between science teachers and humanities teachers in respect of the six values, viz. Theoretical, Economic, Aesthetic, Social, Political and Religious
3. To find out if there was any significant difference between the teachers up to 30 years of age and the teachers above 30 years of age in respect of the six values, viz. Theoretical, Economic, Aesthetic, Social, Political and Religious

Null Hypotheses

The following Null Hypotheses were framed for the purpose of verification in this study

1 There was no significant difference between men and women teachers in respect of
   (a) Theoretical value,
   (b) Economic value,
   (c) Aesthetic value,
   (d) Social value,
   (e) Political value, and
   (f) Religious value
2. There was no significant difference between science teachers and humanities teachers in respect of
   (a) Theoretical value,
   (b) Economic value,
   (c) Aesthetic value,
   (d) Social value,
   (e) Political value, and
   (f) Religious value
3. There was no significant difference between teachers up to 30 years of age and teachers 30 years of age and above in respect of
   (a) Theoretical value,
   (b) Economic value,
   (c) Aesthetic value,
   (d) Social value,
   (e) Political value, and
   (f) Religious value.

Sample

Random sampling technique was used in the selection of the sample of this study

From 1,660 teachers who underwent M.Ed. through Distance Education Programmes of the Directorate of Distance Education, Annamalai University, Annamalainagar, Tamil Nadu, as many as 415 teachers were selected for this study. The sample consisted of the following sub-samples: Men=210, Women = 205, Science Teachers = 158; Humanities Teachers = 257; Teachers up to 30 years of age = 160, Teachers

30 years of age and above = 255.

Tool

In this investigation, Allport-Vernon-Lindzey's Scale of values was used. The relative prominence of the six basic values are measured by this scale.

Statistical Treatment of the Data and Interpretation

The means and the standard deviations of the value scores of the men and women teachers were calculated for all the six values and their respective ranking was also found out (Table 1).

It may be seen from Table 1 that both men and women teachers get the first rank in respect of the social value and the last (sixth) rank in respect of the Religious value. Similarly, agreement between them is found in the fifth rank, too. In both the cases the political value gets the fifth rank.

The test of significance was used in order to verify the Null Hypotheses 1 (a),(b),(c),(d),(e) and (f). Details of the calculations are given in Table 2

TABLE 1

Means and Standard Deviations of the Six Values Scores of Men and Women Teachers

Values	Men (N = 210)			Women (N = 205)		
	Mean	SD	Ranks	Mean	SD	Ranks
Theoretical	37.42	6.49	4	41.33	5.75	2
Economic	39.51	6.89	2	40.12	6.56	3
Aesthetic	38.42	6.82	3	39.02	6.80	4
Social	50.18	7.33	1	49.23	7.28	1
Political	36.41	6.18	5	37.10	7.21	5
Religious	32.68	6.33	6	36.28	7.18	6

TABLE 2

Significant of the Difference Between the Means of the Six Values Scores of Men and Women Teachers

Values	Sub-samples	N	M	SD	σ_D	CR	Significance at 0.01 Level
Theoretical	Men	210	37.42	6.49	0.60	6.52	Significant
	Women	205	41.33	5.75			
Economic	Men	210	39.51	6.89	0.66	0.92	Not Significant
	Women	205	40.12	6.56			
Aesthetic	Men	210	38.42	6.82	0.67	0.90	Not Significant
	Women	205	39.02	6.80			

Social	Men	210	50 18	7 33	0 72	1 32	Not Significant
	Women	205	49 23	7 28			
Political	Men	210	36 41	6 18	0 66	1 05	Not Significant
	Women	205	37 10	7 21			
Religious	Men	210	32 68	6 33	0.67	5 37	Significant
	Women	205	36.28	7.18			

(df = 413; p≤ 2 59)

Except in the cases of theoretical value and religious value, the difference between the men and women teachers is not significant at 0 01 level for the other values Therefore, null hypotheses 1(a) and 1(f) are rejected and other null hypotheses (1(b), 1(c), 1(d) and 1(e)) are retained. The mean of the theoretical value for women (41.33) is higher than the mean of the theoretical value for men (37 42) Similarly, the mean of the religious value for women (36 28) is higher than the mean of the religious value for men (32.68). Thus in respect of the aforesaid two values, the women are better than men teachers The highest mean in both the cases is for the social value. This is desirable because the teachers are expected to serve the society and carry out their social obligations to the full

TABLE 3

Means and Standard Deviations of the Six Values Scores of Science and Humanities Teachers

Values	Science (N = 158)			Humanities)N=257)		
	Mean	SD	Ranks	Mean	SD	Ranks
Theoretical	38.21	6.12	3	39 14	6 20	2
Economic	39 14	7 12	2	35 42	6 42	6
Aesthetic	36 14	6 30	5	39 10	6 28	3
Social	41 07	7,01	1	40.28	6 98	1
Political	37 68	6 72	4	38 52	6 43	4
Religious	322 12	6 21	6	36 11	6 18	5

The means and the standard deviations of the value scores of the science and the humanities teachers were calculated and their relative ranking of the values was also found out (Table 3)

Both the science and humanities teachers score the first rank in respect of the social value and this is, as already observed, a desirable trend among teachers. But in respect of the religious value, the fifth rank is secured by the humanities teachers whereas only the last (sixth) rank is secured by the science teachers It is but natural that the science teachers are prone to be less religious than the humanities teachers

The Test of Significance was used in order to verify null hypotheses 2 (a), (b), (c), (d), (e) and (f). Details of the calculations are given in Table 4

TABLE 4

Significance of the Difference Between the Means of the Six Values Scores of Science and Humanities Teachers

Values	Sub-samples	N	M	SD	D	CR	Significance at 0.01 Level
Theoretical	Science	158	38.21	6.12	0.62	1.50	Not Significant
	Humanities	257	39.14	6.20			
Economic	Science	158	39.14	7.12	0.69	5.39	Significant
	Humanities	257	35.42	6.42			
Aesthetic	Science	158	36.14	6.30	0.64	4.63	Significant
	Humanities	257	39.10	6.28			
Social	Science	158	41.07	7.01	0.71	1.11	Not Significant
	Humanities	257	40.28	6.98			
Political	Science	158	37.68	6.72	0.67	1.25	Not Significant
	Humanities	257	38.52	6.43			
Religious	Science	158	32.12	6.21	0.63	6.33	Significant
	Humanities	257	36.11	6.18			

(df = 413; $p \leq 2.59$)

In respect of economic, aesthetic and religious values, the difference between the science and humanities teachers is significant at 0.01 level. Therefore, the null hypotheses 2(b), 2(c) and 2(f) are to be rejected. In respect of theoretical, social and political values there is no significant difference between the two and, therefore, null hypotheses 2(a), 2(d) and 2(e) are to be retained. In respect of the economic values, the mean of the science teachers (39.14) is higher than the mean of the humanities teachers (35.42). This is not surprising because the science teachers are likely to be more pragmatic than the humanities teachers. But in respect of the means of the scores on the aesthetic and religious values the humanities teachers (mean 39.10 for aesthetic and mean 36.11 for religious values) are better than the science teachers (mean 36.14 for aesthetic and mean 32.12 for religious values). This is also in tune with the nature of the subjects taught by the respective teachers.

The means and the standard deviations of the value scores of the teachers up to 30 years of age and the teachers above 30 years of age were calculated and their ranking of the various values was also calculated (Table 5).

TABLE 5

Means and Standard Deviations of the Six Values Scores of Teachers Up to 30 Years of Age and Teachers Above 30 Years of Age

Values	Teachers Up to 30 Years of Age (N=160)			Teachers Above 30 years of Age (N=255)		
	Mean	SD	Ranks	Mean	SD	Ranks
Theoretical	34.62	6.23	5	34.81	6.82	6
Economic	35.13	6.21	4	39.42	6.43	2
Aesthetic	36.45	5.99	3	36.63	6.02	5
Social	40.11	6.11	1	40.42	6.92	1
Political	37.42	6.34	2	38.02	6.42	3
Religious	32.08	6.08	6	37.11	6.37	4

Here also both types of teachers give first rank to social value. But religious value gets the last (sixth) rank in respect of teachers up to 30 years of age whereas the same gets the fourth rank in respect of the teachers above 30 years of age It is but natural for the older people to be more oriented towards religion than the comparatively younger people. It is interesting to note that aesthetic value gets the fifth rank in respect of the teachers above 30 years of age, whereas it gets the third rank in respect of the teachers up to 30 years of age.

The test of significance was used in order to verify null hypotheses 3(a), 3(b), 3(c), 3(d), 3(e) and 3(f) Details of the calculations are given in Table 6.

TABLE 6

Significance of the Difference Between the Means of the Six Values Scores of Teachers Up to 30 Years of Age and Teachers Above 30 Years of Age

Values	Sub-samples	N	M	SD	σ_D	CR	Significance at 0.01 Level
Theoretical	Up to 30 years of age	160	34.62	6.23	0.65	0.29	Not Significant
	Above 30 years of age	255	34.81	6.82			
Economic	Up to 30 years of age	160	35.13	6.21	0.63	6.81	Significant
	Above 30 years of age	255	39.42	6.43			
Aesthetic	Up to 30 years of Age	160	36.45	5.99	0.61	0.30	Not Significant
	Above 30 years of age	255	36.63	6.02			

Social	Up to 30 years of age	160	40.11	6.11	0.65	0.48	Not Significant
	Above 30 years of age	255	40.42	6.92			
Political	Up to 30 years of age	160	37.42	6.34	0.64	0.94	Not Significant
	Above 30 years of age	255	38.02	6.42			
Religious	Up to 30 years of age	160	32.08	6.08	0.62	8.11	Significant
	Above 30 years of age	255	37.11	6.37			

(df = 413 $p \leq 2.59$)

In respect of economic and religious values, there is significant difference between the teachers up to 30 years of age and the teachers above 30 years of age. Therefore, null hypotheses for 3(b) and 3(f) are to be rejected. The mean of the economic value scores of the teachers above 30 years of age (39.42) is higher than the mean of the economic value scores of the teachers up to 30 years of age (35.13) Similarly, the mean of the religious value scores of the teachers above 30 years of age (37 11) is higher than the mean of the religious value scores of the teachers up to 30 years of age (32.08) Thus, the teachers above 30 years of age are better than the teachers up to 30 years of age in respect of economic and religious values In respect of theoretical, aesthetic, social and political values, there is no significant difference between the teachers up to 30 years of age and the teachers above 30 years of age. Therefore, the null hypotheses 3(a), 3(c), 3(d) and 3(e) are to be retained.

Important Findings

1. Among the value preferences by the teachers, social value gets the first rank

2. In respect of religious value, there is significant difference between the men and women teachers, between the science and humanities teachers and also between the teachers up to 30 years of age and the teachers above 30 years of age. The women teachers, humanities teachers and the teachers above 30 years of age are better than the men teachers, science teachers and the teachers up to 30 years of age, respectively, in respect of religious value.

3. There is significant difference between the men and women teachers in respect of theoretical value and the women teachers (Mean=41.33) are better than the men teachers (Mean=37.42) in respect of this value

4. There is significant difference between the science and humanities teachers in respect of economic value and the science teachers (Mean = 39.14) are better than the humanities teachers (Mean=35.42) in respect of this value.

5. There is significant difference between the science and humanities teachers in respect of aesthetic value.

   The humanities teachers (Mean=39.10) are better than the science teachers (Mean = 36.14) in respect of this value.

6. There is significant difference between the teachers up to 30 years of age and the teachers above 30 years of age in respect of economic value and the teachers above 30 years of age (Mean=39 42) are better than the teachers up to 30 years of age in respect of this value.

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Development and Standardization of a Social Responsibility Scale

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ONE of the most significant aims of our educational institutions is to make adolescents socially more responsible. Social responsibility plays a vital role in determining the nature of social interactions. Social and national advancement depends on the nature of social interactions. Social responsibility tries to impart socially desirable characteristics among our student personalities. It is a submixture of social norms, values, patterns and social learning. Appropriate feelings of social responsibility promote and maintain social discipline more rationally. But in the prevailing system, there seems the problem of student unrest and irresponsible behaviour.

May be, it is our changing social value system that inspires our school adolescents towards anti-social activities. In the present complex socio-cultural milieu it becomes very necessary to measure the social responsibility of college adolescents. The investigators, therefore, made an attempt to construct a scale for the measurement of social responsibility of college/school adolescents.

Selection of the Technique of Scale Construction and Initial Items

The investigators deployed the Scale Product Methods of scale construction, which combines the Thurstone and Likert Method and was evolved by Eyseneck and Crown (1949). A large number of statements reflecting different shades of social responsibility relating to identified areas were collected initially from literature. The social responsibility scale was thus theorised to have the following dimensions :

1. Adolescents' faith, love and responsibilities in view of their family.
2. Adolescents' socially responsible behaviour with connection to school.
3. Adolescents' socially responsible behaviour in the association.
4. Adolescents' faith, respect, love and responsible attitude in relation to broader society.

After selecting the domain of social responsibility, 35 items describing each domain were made into a booklet. These 140 statements/items aware conceived and written by the investigators on the basis of their past and present experiences of social and educational life Negative items were also made in these statements. Then these statements were distributed among sixteen judges. Among them seven lecturers were from the Faculty of Education, Kumaun University, Almora, five research scholars in education and four principals of intermediate colleges of Almore town Besides formal instructions in the booklet, the judges were contacted personally and were acquainted with the objectives of the investigation. They were requested to judge the face value of each statement and not to reflect their feelings towards social responsibility On the basis of 75 per cent agreement of the judges, the following number of statements were selected as mentioned in Table 1

Item Analysis

These 128 items were made into a booklet with necessary instructions The items were administered to 200 adolescents (100 male and 100 female) of four Intermediate colleges of Almora town They were studying in XI and XII standards. The students were asked to mark right (✓) to the item if they thought it to be applicable to them and to mark cross (X) to the item which was not applicable to them. For every right marked positive item and every cross marked negative item the students were awarded one mark. For every cross marked positive item and for every right marked negative item, the students were awarded zero mark. After that total number of one mark and total number of zero mark were counted. Then item analysis was computed to determine as to how well the scale items differentiated between the criterion groups based on the total scores. For it the obtained scores were subjected to point-bi-serial coefficient of correlation. Those items which were found significant at .05 confidence level and had positive correlation were selected and those which were found insignificant at .05 level and had negative correlation were rejected A clear picture of the results of items analysis is presented in Table 2.

TABLE 1

Distribution of Items (Dimension-wise)

S.No.	Dimension	No of Items
1	Family	30
2	School	33
3	Association	31
4	Broader Society	34
Total	04	128

TABLE 2

Results of the Item Analysis of Social Responsibility Scale (SRS)

Item No	r	Level of Significance	Remark	Item No	r	Level of Significance	Remark
1	.060	n.s.	Rejected	2	150	05	Selected

3	163	.05	Selected	4	.190	01	Selected
5.	.170	05	Selected	6	397	01	Selected
7	420	01	Selected	8	230	01	Selected
9.	370	01	Selected	10	.310	01	Selected
11	170	.05	Selected	12.	150	05	Selected
13	331	.01	Selected	14	.320	01	Selected
15	372	01	Selected	16	274	01	Selected
17.	330	.01	Selected	18.	280	01	Selected
19	118	N S	Rejected	20	334	01	Selected
21.	.273	01	Selected	22	.270	01	Selected
23	360	01	Selected	24	332	01	Selected
25	200	01	Selected	26.	.310	.01	Selected
27	350	01	Selected	28	360	01	Selected
29	222	01	Selected	30.	210	.01	Selected
31	190	.01	Selected	32	440	01	Selected
33	353	01	Selected	34	.115	N.S	Rejected
35	391	01	Selected	36	.250	.01	Selected
37	360	01	Selected	38.	.241	01	Selected
39	250	01	Selected	40	360	01	Selected
41	.320	01	Selected	42	.274	01	Selected
43	-.133	N S	Rejected	44	.119	N S	Rejected
45	- 005	N S	Rejected	46.	380	01	Selected
47	.410	01	Selected	48.	200	01	Selected
49.	350	.01	Selected	50.	473	.01	Selected
51	170	.05	Selected	52.	045	N S	Rejected
53.	.410	01	Selected	54	.392	.01	Selected
55	- 103	N S.	Rejected	56	.154	.05	Selected
57.	243	01	Selected	58	395	.01	Selected
59	424	01	Selected	60	320	01	Selected
61.	320	01	Selected	62.	.320	.01	Selected
63	.312	.01	selected	64.	.067	N S.	Rejected
65	499	01	Selected	66	487	01	Selected
67	.404	01	Selected	68.	353	.01	Selected
69	530	.01	Selected	70	230	01	Selected
71.	.233	01	Selected	72	430	01	Selected

73	420	01	Selected	74	470	01	Selected
75	.341	01	Selected	76.	413	01	Selected
77	.444	01	Selected	78	472	01	Selected
79	172	.05	Selected	80	355	01	Selected
81.	.450	01	Selected	82	.430	.01	Selected
83	330	01	Selected	84	262	01	Selected
85	480	.01	Selected	86	292	01	Selected
87	312	01	Selected	88	150	05	Selected
89	497	.01	Selected	90	450	01	Selected
91	445	.01	Selected	92	190	01	Selected
93	273	01	Selected	94	380	01	Selected
95	333	01	Selected	96	178	05	Selected
97	282	01	Selected	98	293	01	Selected
99	.322	01	Selected	100	325	01	Selected
101	391	01	Selected	102	454	01	Selected
103	541	01	Selected	104	382	01	Selected
105.	542	01	Selected	106	348	.01	Selected
107	387	01	Selected	108.	313	01	Selected
109	239	01	Selected	110	331	01	Selected
111	345	01	Selected	112	330	01	Selected
113	246	01	Selected	114	280	01	Selected
115	417	01	Selected	116	169	05	Selected
117	.234	.01	Selected	118	517	.01	Selected
119	.240	.01	Selected	120.	251	01	Selected
121.	.279	01	Selected	122	178	05	Selected
123	263	01	Selected	124	261	01	Selected
125	248	01	Selected	126	375	01	Selected
127	150	05	Selected	128	351	01	Selected

It is clear from the above table that after item analysis 119 items were retained in the SRS for the final format. The distribution of the selected items is presented, dimension-wise, in Table 3

TABLE 3

Distribution of Items (Dimension-wise) After Item Analysis

S No	Dimension	No. of Items	No of Positive Items	No of Negative Items
1.	Family	28	11	17
2.	School	32	11	21
3.	Association	28	20	08
4	Broader Society	31	22	09
Total	04	119	64	55

Application of the Likert Technique

The selected 119 items were printed in a booklet form with necessary instructions. Each item was followed by a five-point forced choice scale — Strongly Agree, Agree, Indifferent, Disagree, Strongly Disagree

Final Format and Administration of the Social Responsibility Scale

These 119 items were incorporated in a five-point scale Then the SRS was administered on randomly selected 750 (boys and girls) secondary school adolescents of Kumaun region

The secondary school adolescents were distributed booklets containing 119 statements in small classroom group situations. They were asked to read the instructions printed in the booklets and respond to each items in terms of their own degree of agreement or disagreement with regard to the item. Besides formal instructions in the booklet, the students were contacted personally in groups and acquainted with the objectives of the study.

The scoring was done on the basis of the Scale-Product technique by awarding weight for each response category in the usual Likert method. The statements which expressed favourable attitude towards social responsibility were awarded weight as under :

Category	*Weight*
Strongly Agree	4
Agree	3
Indifferent	2
Disagree	1
Strongly Disagree	0

In the case of unfavorable attitude towards social responsibility, for such statements the range of weight was reversed

The scale aims at measuring the students' attitude towards social responsibility Therefore, the social responsibility scale (SRS) was thought to be an appropriate name for it.

The responses to the students' feelings towards social responsibility were combined into four indices, namely — family, school, association, and broader society In the present attempt study, a high degree of generality in social responsibility has been observed, due to the fact that all statements belonged to the same family. The correlation matrix presented in Table 4 shows correlations between family, school, association and broader society dimensions with one another and with the total social responsibility scores.

It is evident from Table 4 that there is found

TABLE 4

Correlation Matrix

Dimension	1	2	3	4	5
1. Family	-	.82	60	.70	90
2. School	82	-	57	.71	89
3 Association	.60	.57	-	.68	.78
4 Broader Society	.70	.71	.68	-	.87
5 Total SRS	90	89	78	.87	-

statistically significant relationships of family, school, association, broader society with one another and with the total social responsibility scores at .01 confidence level. It reflects that the four dimensions are significant contributors of social responsibility scale.

Reliability of Social Responsibility Scale

The test-retest method of determining reliability is most logical and fruitful. Two hundred subjects were administered SRS, and were retested after two months of the first testing The correlation between the two sets of scores was .79. It reflects that the scale enjoys high degree of reliability

The split-half reliability was also computed on a sample of two hundred secondary school adolescents. The split-half reliability was found .82 by the product moment correlation method. It also justifies that the Social Responsibility Scale is a reliable tool

Validity of Social Responsibility Scale

The process of selecting the items through the judgement of competent judges confirms the content validity of SRS The items analysis process indicates its item validity.

The dimension validity was computed by the product moment method The correlation between the dimensions and the total scores were computed All the product moment coefficient of correlations presented in Table 4 were found statistically significant beyond .01 level of confidence. All the statistically significant coefficient of correlations confirmed the validity of the dimensions by establishing internal consistency.

The concurrent validity of the social responsibility scale was also computed The social responsibility scale and the moral development scale were administered to 200 secondary school adolescents (100 boys and 100 girls) of Almora town. The product moment coefficient of correlation was computed between the total scores of the social responsibility scale and the total scores of the moral development scale The value of 'r' between the two tools was recorded as .88 which is statistically significant at .01 level of significance. It confirms the concurrent validity of the social responsibility scale

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Book Review

Innovation and Creativity at Work : Psychological and Organizational Strategies

Michael A. West and James L. Farr,
John Wiley and Sons Ltd.(England), 1990 pp. 349.

Two major challenges which face us now more than ever are how to adapt successfully to change and how to bring about change in environments which are not conducive to our well-being and effectiveness. Work environments in particular are often directly damaging to health and well-being with stressors causing both physical and psychological damage to people. Previous researches conducted on managers also indicate that their self-concepts at work are significantly less positive than their self-concepts outside work. The study of innovation and creativity at work premises strategies for meeting the challenge of how to bring about change in work environments. There is evidence that those who have opportunities to manipulate their work environments and to be creative at work are more satisfied and better adjusted than those with fewer opportunities.

This volume dedicated to the subject, innovation in work organization, has long been of great concern to social scientists The book is divided into five parts. The first part provides a discussion of definitional issues and literature review. In the introductory chapter conceptual overlaps with topics such as creativity in the existing psychological literature are explored. Different types of innovation at work are briefly described and typology is suggested which distinguishes between innovations at the individual, group and organisational level of analysis. In part II research on individual and group innovation is described Part III of the book is dedicated to an exploration of organizational level innovation and four differing orientations are proposed Each promises to advance theorizing by alerting us to the complexity of this topic. The fourth part of the book focuses on interventions to facilitate innovation and creativity in work setting In the final section the theme is integration. Staw Berry M. produces a model of individual creativity and organization innovation, blending psychological and organizational approaches. West Michael A focuses upon group level innovation and draws upon the research literature to generate a new theory of group innovation.

This book has been collectively and carefully designed by the contributors and editors Though published on the basis of researches conducted in America and Europe, the book in some measure, presents advanced understanding of what we believe to be an important aspect of change constantly impacting upon the likes of the people in India Thus this book will add to the knowledge of the persons engaged in the field of organization behaviour in our country. Keeping this book in the library will be an asset to the academicians.

R D SHARMA

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TO OUR CONTRIBUTORS

JIE invites articles/papers on the impact of educational research on classroom practices and policy decisions. Specific examples where this impact is apparent may by given.

— GENERAL EDITOR

Philosophy, Computers, and Mathematics

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THE mathematics curriculum needs to place heavy emphasis upon computer utilization. Software packages need to guide learners to achieve objectives. Each software package should stress sequential subject matter to be acquired so that more optimal student progress in mathematics is possible With quality sequence, learners should experience increased success when interacting with the content presented on the monitor. Sequential learning emphasizes a relationship of new subject matter attained with that previously acquired. Knowledge that is related should be retained longer by students as compared to that which is fragmented. Quality software in mathematics should provide content which is correlated, fused and integrated with subject matter previously achieved.

Software content needs to capture student interest Thus the student and the mathematics curriculum become one, not separate entities Subject matter then presented on the monitor attracts learner attention Set establishment is in evidence. An inward desire exists by the student in wanting to achieve relevant objectives in mathematics.

Purpose needs to be in evidence to achieve vital facts, concepts, and generalizations in mathematics. The mathematics teachers may stimulate students, inductively or deductively, to accept reasons for learning. After purpose has been established, students need to be actively involved in achieving vital subject matter from the ongoing software presentation.

Thus success in learning, student interest, as well as learner purpose in software/computer experience are musts in a quality mathematics curriculum.

Philosophy of Education in Mathematics Software Utilization

The mathematics teacher needs to study and analyze diverse schools of thought in the software/computer curriculum. Each philosophy has selected recommendations to make in teaching-learning situations. The philosophy emphasized needs to harmonize with the personal learning style of a student.

First of all a problem-solving strategy may be implemented in ongoing lessons and units. Flexible steps of problem-solving include careful identification of a problem in mathematics. The problem should be selected by students with teacher guidance in a contextual situation. Each problem is life-like and comes from the societal arena. Thus the mathematics curriculum is not separated from society.

Information needs to be gathered in answer to the problem Subject matter contained in relevant software might well be a part of the total needed information. Other reference sources may also be utilised such as mathematics textbooks, works, and audio-visual materials. A hypothesis results which is an answer to the problem The hypothesis is tentative and subject to modification as a result of testing. A hypothesis is not an absolute, but tentative in nature. Salient software then has an important role to fulfil in the total problem-solving sequence and arena.

Problem-solving strategies in mathematics do not

1. have predetermined objectives for student attainment.
2. assess a logical sequence in which the mathematics teacher/educator selected sequential learning activities for students.
3. emphasize a behavioural model of teaching. Behaviourism stresses objectives, measurable results in each step of student learning.
4. advocate paper-pencil tests to secure data on student achievement Rather, the ability to define and solve real problems in mathematics provides evidence of learner achievement.
5. stress a highly structured sequence in the curriculum Problem-solving emphasizes openness, creativity, and flexibility in problem identification, information gathering, hypothesizing, as well as testing and revising the hypothesis.

Information acquired and hypothesis testing might well provide for utilization of quality software

Pertaining to problem-solving, Grossnickle, Reckzeh, Perry and Ganoe wrote the following

> Problem-solving is a process by which the choice of an appropriate strategy enables a pupil to proceed from what is given in a problem to its solution Often the answer is the least important part of the problem-solving process, few of the answers children obtain in school mathematics will have much value in their lives The ideas used in the process are much more valuable than the answer. Thus it is important for teachers to determine whether an incorrect answer is due to an error in process or in computation Do not, however, infer from this discussion that errors in computation are acceptable, rather, keep in mind that overemphasis on answers may impede the pupil's understanding of the process A pupil with poor computational ability who understands the process can use a calculator to get the answer A pupil who can compute rapidly and accurately but does not understand the process is lost

A second philosophical school of thought in microcompucer/software use in mathematics is a decision-making strategy. With decision-making, the student selects learning activities, from among alternatives Thus in mathematics, an adequate number of software packages are available from which learners may select to pursue. A brief description of each is available to the learner The student is the chooser and omits those not possessing purpose, meaning, and interest. In addition to software programmes, other avenues in learning are available such as textbooks/workbook' activities, as well as audio-visual experiences.

A learning centers approach may be utilized

Each center contains relevant software related directly to the mathematics unit presently being taught Content on the monitor for student interaction and acquisition of subject matter guides the learner to attain vital objectives. Diverse routes, including salient software, may be selected by the learner to attain objectives. To make choices means to choose from numerous software packages in order that objectives may be achieved. A psychological mathematics curriculum is in evidence if each student sequences his/her routes (learning opportunities) to attain salient objectives. To emphasize increased decision-making, objectives to achieve may be chosen by the learner A major goal here is that the student will select those objectives that are most challenging. Optimal achievement for student attainment is of utmost importance in decision-making Time on task in selecting and interacting with software content is a must Through self selection, the student becomes actively involved in making choices in the mathematics curriculum The learner is an active being rather than a passive recipient.

A contract system might also emphasize a decision-making strategy. Here the student with teacher guidance determines which computer programmes to complete. These are written up in contract form with the due date specified Both the student and the teacher sign the agreed upon contract for learning activities to be completed by the former. The student then selects sequential programmes to complete

To further stress decision-making strategies, students with teacher assistance may plan selected objectives of instruction in mathematics. To achieve the chosen objectives, students and the teacher cooperatively determine the learning opportunities, computer/software as well as other activities. Appraisal procedures should also be cooperatively developed

Decision-making strategies do not emphasize:

1. a predetermined mathematics curriculum Rather heavy input from learners is involved in selecting objectives, learning opportunities, and appraisal procedures within the framework of the mathematics software/computer curriculum.
2. a subject-centered curriculum only. Attitudes and the affective dimension are equally salient to emphasize as objectives of instruction in the mathematics curriculum involving computer/software utilization
3. an essentialist or basics curriculum for all students Rather choices and decisions, from among alternatives, may be made by learners in terms of activities and experiences in software programmes to pursue
4. a logical curriculum whereby the mathematics teacher or state mandated objectives determine sequentially what students are to learn Rather the learner in a psychological curriculum determines sequentially that which is to be learned.
5. a formal mathematics curriculum. Instead, flexibility and openendedness are two viable concepts in that the student makes choices and decisions in the computer/software mathematics curriculum

Abelson wrote the following on student control over computers/software

> Logo is the name for a philosophy of education and for a continually evolving family of computer languages that aid its realization Its learning environments articulate the principle that giving people personal control over powerful computational resources can enable them to establish intimate contact with profound ideas from science, from mathematics, and from the art of intellectual model building. Its computer languages are designed to transform computers into flexible tools to aid in learning, in playing, and in exploring
>
> We try to make it possible for even young children to control the computer in self-directed ways, even at

> their very first exposure to Logo At the same time, we believe Logo should be a general purpose programming system of considerable power and wealth of expression .More than 10 years of experience at MIT and elsewhere have demonstrated that people across the whole range of "mathematical aptitude" enjoy using Logo to create original and sophisticated programs Logo has been successfully and productively used by preschool, elementary, junior high, senior high, and college students, and by their instructors

A third philosophy of instruction to emphasize is measurement driven instruction (MDI). Measurement driven instruction stresses the utilization of predetermined objectives for student attainment The objectives are stated in measurable terms prior to microcomputer/software use Each end is precise Either a student has/has not achieved the specific objective(s) after instruction. The objectives may be state-mandated, district-wide instructional management systems, or written by the mathematics teacher

To attain each objective, the student needs to experience quality software programmes. Each programme needs to align directly with the measurably stated objective(s). Subject matter contained in the software package then guides students to achieve the measurably stated objective(s). The content experienced by students must be sequential so that optimal learner progress is possible.

Appraisal procedures must also align with the objectives so that content validity is in evidence. Reliability in measurement procedures is a must, be it test-retest, split-half, or alternate forms.

A carefully structured sequence of objectives, learning opportunities involving computer/software use, and appraisal procedures needs to be in evidence. Each component -- objectives, learning opportunities, as well as appraisal procedures -- is related to the other component Thus, designing the curriculum with a measurement driven instruction model might guide students to achieve more optimally in the computer/software mathematics curriculum.

Measurement driven instruction does not emphasize

1. an open-ended mathematics curriculum whereby input from learners is in evidence pertaining to selecting software programmes.
2. a psychological sequence in which students are involved in sequencing their own experiences Rather, mathematics educators select objectives, activities, and appraisal procedures in the hardware/software curriculum
3. decision-making by students as to the scope and sequence of the mathematics curriculum
4. problem-solving activities which relate society and school mathematics within the computer/software curriculum
5. general objectives in mathematics. Instead, precise, measurably stated ends are emphasized in ongoing activities.

Conclusion

Software programmes in mathematics might emphasize

1. problem-solving strategies. Real life problems in mathematics need identification and solutions.
2. students selecting from among alternative objectives and learning activities, as well as appraisal procedures.
3. measurement driven instruction. With precise predetermined objectives,students either do or do not achieve measurable ends as a result of learning activities.

The writer recommends continued emphasis be placed upon problem-solving. In the real world of society, individuals select and solve problems Personal and social problems need solutions.

Software programmes in mathematics might emphasize

1. drill and practice to have students review what has been learned previously
2. tutorial to guide students to acquire new content in sequence.
3. simulations whereby students experience problem-solving in a role play situation
4. games in which students individually or in a small committee compete against others in an atmosphere of respect and appreciation

These four kinds of software packages should guide each student to achieve as optimally as possible in the mathematics curriculum.

Computer literacy in mathematics is important for all students. Pertaining to computer literacy, Flake, McClintock, and Turner wrote:

> Of all the uses of computers, which ones should all students learn to do comfortably and successfully? These questions have stimulated controversy among educators. Some people equate computer literacy with the ability to select and use commercial software. Their argument is that the average person does not need to know how a computer works, what RAM is, or how to write a computer program. They compare using a computer to driving a car -- in order to drive, one does not need to know how a car works, what manifold is, or how to do a tune-up.
>
> On the other hand, some people equate computer literacy with knowledge of programming. Their argument is that in order for a person to use the computer to solve problems, that person needs to have the flexibility and control that a knowledge of programming provides. In short, knowledge is power.

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Value-oriented Education

C.P. KHANNA

We are passing through a great transition in all walks of life including the field of education The old is becoming obsolete and the new is still in the process of emergence. The old ways of learning and teaching are found to be too rigid and out-moded. There is an increasing need to apply modern psychological principles in undertaking the teaching assignment. The teaching work calls for greater responsibility. It should be directed to the training of the mind of the young in worthwhile and constructive channels. True education is fundamentally a process of training whereby the individual is enabled to embody, progressively, those values which we in our thought and aspiration regard as desirable. If we analyse the human nature, we find there are in us various energies which can be distinguishable under various categories such as physical, emotional, mental, aesthetic, moral and spiritual. These energies are mostly latent in us and only a part of them are actually active. Even the active part of our energies needs to be developed and directed towards their highest point of fulfilment in their respective values But the task of education is not limited merely to the development of our active energies, but also to bring out our latent capabilities and lend them to their rightful goals and ideals The teacher should, therefore, have a sound knowledge of the psychology of man and should know the secrets of the principles underlying the development of both our active and latent capacities.

It must be admitted that it is not easy to settle and determine the precise relationship between moral values and practical knowledge, how precisely pursuit of science and pursuit of moral values related to each other and how precisely we should encourage the pursuit of moral values in our system of education There are, however, some guidelines that we can derive from the contemporary educational thought and from some of the great educational experiments conducted in India and elsewhere.

In the domain of physical education, the values that we ought to seek are those of health, strength, plasticity, grace and beauty. In the domain of emotional education, the values that we ought to seek would be those of harmony and friendliness, of courage and heroism, of endurance and perseverance and of irresistible will to conquer the forces of ignorance, division and injustice. In the domain of the mental development, the values that we ought to seek would be those of utmost impartiality, dispassionate search after the Truth, Calm and Silence, and widest possible synthesis The values pertaining to the aesthetic development would be those of the vision of the Beauty and creative joy of the deepest possible aesthetic experience and expression

Values that we should seek in the moral and spiritual domain are those of sincerity, faithfulness, obedience to whatever one conceives to be the highest, gratitude, honesty benevolence, generosity, cheerfulness,selflessness, freedom from egoism, equality in joy and suffering, in honour and dishonour, in success and failure, pursuit of the deepest and the highest, of the absolute and ultimate and progressive expression of this pursuit in thought, feeling and action.

We are living in an era where science and technology have indeed exploded into massive endeavour and achievements at a rapid pace. Scientific activities are doubling every ten years Science and technology have enabled man to wrest from nature truth after truth, which were hidden and jealousy guarded by her, and transform nature's forces into agencies for the service of humanity. All scientific knowledge is value-free, so the accelerative thrust of technology has immensely increased man's psychological problems, he is now feeling that life on this planet has become complicated and insecure. The enoromous increase in scientific knowledge has resulted in consequent increase of comfort, leisure and power, but side by side there has been a decline in values. The contradiciton between value-free science and moral/ethical demands could not be resolved, and mere physical science could not uphold the values. The most prominent contemporary social phenomenon is the breakdown of all ethical and moral codes based on an external authority, be it a sacred book, the fiat of an extra-cosmic God, a Church, or even a political state, and modern man's incapacity to find a rational basis for his ethical and moral behaviour.

A highly developed civilization, backed by an efficient science and technology, finds humanity wondering about the whole place of values in human life After the Second World War, outstanding western thinkers Pitirim S Sorokin of Harvard University and Bertrand Russell of England -- have warned that modern civilization cannot survive unless it is inspired by ethical spiritual values. Among these values, the most important, which they stressed, was love. Bertrand Russell discusses the place of values in our modern machine-dominated civilization in the words·

> "Whatever else may be mechanical, values are not, and this is something which no political philosopher must forget"

By adding machine to machine and by increasing the efficiency of our technology, we cannot produce values in society, we cannot generate love in the 'heart' of men. There is a hidden fear that modern humanity, not guided by high ethical values and ideals, utilize this knowledge to destroy itself. Bertrand Russell writes

> "Unless men increase in wisdom as much as in knowledge, increase of knowledge will be increase of sorrow"

Unfortunately, the world today is passing through an unprecedented moral and social crisis Modern man, having rejected the old values, has been unable to find new moorings and is incapable of facing and meeting the exacting challenges of everchanging complex modern life. With growth material prosperity, increasing newer and newer faces of life, and ever greater mastery over external nature, he is also piling up devastating means of self-destruction. There is an ever-increasing distortion of his psyche. This is leading to fragmentation of his psychological personality resulting in mounting incidence of schizophrenia, neuroses, psychoses, suicide, crime and violence Even with the highest technological advance we may not be able to cope with increasing violence and frustration due to ever-increasing conditionings, ever- increasing content of our consciousness. It seems that everything about us has collapsed; though seemingly there is order, in fact there is slow decay, destruction; the wave of destruction is constantly overtaking the wave of life.

Many eminent thinkers opined that unless moral development is commensurate with technological development, man's very existence on earth may be in danger. To live in the realm of the self-centred activity of mind or pervading self-preoccupation is practically another name for moral decay. More than anything else, the future of mankind depends largely upon the kind of education children all over the world are receiving at present. Besides making children more informed and more skilled, education should help them to be better human beings There is growing realization today that, amongst other things, a fresh look at the place of moral education to inculcate moral values in the school curriculum is needed. A school curriculum has to respond to the needs and aspirations of a changing society, so that society may undergo transformation with a view to eliminating chaos, disorder, pain, misery, hatred, violence, and so on.

The whole human life seems to be in a state of turmoil. There is a crisis of human character, a crisis of human values, a crisis of human perception, and a crisis of human psyche. Obviously, there must be a radical revolution, a complete transformation, a mutation of the whole of the human psyche.

Moral Education in India

A number of Committees and Commissions have gone into the issues pertaining to the inclusion of social values in education, The University Education Commission, 1948-49, headed by S. Radhakrishnan, highlights, the role of religious and moral education at the University level in the words:

> "Religion cannot be imparted in the form of lessons It is not to be treated as one of a number of subjects to be taught in measured hourly doses. Moral and religious instruction does not mean moral improvement, Instruction is not education . The attempts to make students moral and religious by the teaching of moral religious textbooks is puerile To intellect is not to improve the heart Thought has an effect on the life but there is the danger that we may make the thinking of morals and religions mechanical"

The Committee on Religious and Moral Instruction, 1959, headed by Sri Prakasa recommended, "The deliberate inculcation of moral and spiritual values from the earliest years of our lives" and was of the view that teaching of these values in educational institutions "is desirable and specific provision for doing so is feasible within certain limits". The Education Commission, 1964-66, headed by D.S. Kothari recommended that "conscious and organised attempts be made for imparting education in social, moral and spiritual values".

The Indian society presents a pluralistic composite culture shared by various linguistic, religious and other groups. Young pupils coming from different castes, creeds, economic and cultural background study in the same classroom. About 84 values were listed but specific meanings to these values could not be attributed. Perhaps due to these difficulties the recommendations were not fully implemented.

The Dynamics of Mind and Moral Education

Due to man's evolutionary rise, man transferred his animal instincts to his psychological level. He cannot escape the fact that he has inherited a conditioned body and a conditioned mind. The conditioned mind undergoes spontaneous disintegration and the disintegrated product is called thought Nature has bestowed man with self-awareness or self-conciousness, which implies that he has the awareness of the dynamics of thought "within", or awareness of his inner world. Thought behaves both as a particle and a wave--thought both as a particle constructs the time-space section, which is his external perceptual image, and thought as a wave constructs its own subjective properties, which is his internal perceptual world The particle aspect gives us the knowledge of the perceptual image, the objective nature of thought, the objective world; and the wave aspect gives us the knowledge of the inner perceptual world, the subjective nature of thought, the subjective world, as experienced by us The particle aspect refers to our knowledge of the thought, which is the space-time coordinates of the event; and the wave aspect refers to a picture of the knowledge (not of event), (which is greed or hate or violence of thought) The subjective nature (knowledge of our nature) of thought gives us dualistic concepts, which is "to be" or "not to be". The particle aspect gives us knowledge of measurement and wave aspect gives us concepts of values. The values govern our relationship, which is expressed with people, with things/objects/events, and with ideas. All human psychological problems are constructs of the human thought Life is experience, experience in relationship is action. To meet life fully and adequately, we will have to understand relationship, which is dynamics of mind; so in principle, all education must be directed in understanding relationship. To understand myself, I must understand relationship.

A division between the objective nature and the subjective nature of thought creates the illusion of a pseudo thinker or pseudo observer; this decreased the sensitivity which results in lower level of perception, this dulls the understanding of "oneness" and the sense of wonder that we should have in relation to it' and this eclipses the perception of our own true nature As long as we are rooted in duality, it breeds fragmentation and makes us mechanistic repetitive machine

The scientific pursuit of knowledge does not accept values. Therefore, the present-day scientific and technological society witnesses the most horrifying immorality. A scientist is not less destructive than others, he works on techniques to kill others and passes his knowledge in the hands of war-minded politicians A scientist who discovers the secrets of nature but his discoveries are not related to moral and ethical values may suffer from mental decay as other human beings do. If a scientist thinks that he can improve on the design of nature, then this concept is most frightening Arrogance, wherever it exists in the scientists, priest or layman is immorality. Ignorance of one's own nature is another subtle form or immorality Though the history of man indicates that the mind has the seeds of decay (self-destructive potential) in it all the time, ready to grow like weeds, there is also reason for hope that the mind contains within the germs (self-integrative potential) of regeneration and of freedom also.

Ethical values find manifestation in the context of interaction between human beings in a society. Man has to interact with other human beings for his very humanisation. Ethics, therefore, is inseparable from the social context and *vice versa.* No society can exist and progress without fostering social and ehtical and spiritual values in its population. They constitute the integrating principle in any society, primitive or advanced Like the cement that holds together separate bricks so as to produce the integrated structure of a building, social and ethical and spiritual values help to hold together separate individuals in a social organism, which then ceases to become a mere collection of separate bricks.

The principles holding a society are social values, those holding a community of a group are ethical values, where a community of a group is a part of a social structure. The ethical values depend on the culture, and may be called cultural or moral values; these depend on the socio-economic and socio-political fields of a particular community, or a group or a geographical area The social and ethical values are socio-political fields of human action and endeavour in which man trains himself in strength and steadiness of character and social efficiency. Ethics is a system of moral principles, rules of conduct that guide a community or a group. When a social or ethical principle generates peace, harmony, love happiness in a social organism, it is called a value. If an individual earns his livlihood without harming the interest of others and puts in hard honest work--called selfless work--then selflessness is a value; if he earns his livlihood by pickpocketing, then it is not a value. A mind that does not act according to values--say, habituated in telling lies, will always be in a state of fear. And a coward cannot help being aggressive and arrogant. Either he is aggressive or he is too submissive. And either one is as anti-social and dangerous as the other

All social and ethical (moral or cultural) values are not mechanical and these do not arise from the material environment. These are thought structures or constructs of thought, when the mind is in a relative frame of reference. The values are thought organisations or ideals and belong to the relative field; these are intellectual constructions which lead to harmony and order at the conscious level of mind, the superficial level of mind, these do not effect the subconscious or unconscious level of mind.

The psychosocial evolution is based on thought organisation which constructs ideals. We have constructed a marvellous utopian ideals--communist, socialist, religious ideals, ideals of a nation, a group, a whole network of ideals Some ideals--every man must have bare minimum necessities of life, food, clothing and shelter--are essential. We have to learn to face actual facts rather than worrying about projection of ideals. Fact is what has happened in the past and what is happening now, the present. The past and the present are facts, but the future is only a projection of the thought, an ideal Ideals are meant to avoid the present, and therefore, giving importance to the future. What should be the goal, the purpose, giving importance to the future. What should be the goal, the purpose, the motive are movements in a particular direction, the future. If we want to fact the present, we must jettison the direction, the ideal, the future. We have to be free of the ideals, that is the future, and face the present which is a fact.

I am violent and greedy, but I want to be non-violent and non-greedy, as I have been taught some moral principles at school or at home. I am not happy and I want to be happy I am dull and I want to be bright and clever. I do not investigate as to why I am violent, greedy, unhappy, dull and what are the causes of this disturbance. Moral principles cannot transform the human psyche but these do bring in a new type of conditioning, so moral or ethical education can bring out structural modifications in behaviour patterens The psychosocial evolution, thought organisations, ideals, moral and ethical principles can bring in surface variation of alterations or adaptations; variation is only a new angle of adaption established by the conscious mind with reference to the subconscious; it is a new mode of behaviour arising in the same heredity background; it does not effect the content or the substratum of the consciousness. If I want a transformation of the content of consciousness, then I have to investigate the causes of my violence, greed, misery, pain, whether the causes can be changed, put aside or demolished or understood, if the causes are understood, then a transformation is possible. The real education is to understand our reaction and the causes of those reactions.

One who lives in the relative frame of reference of mind or sense-data level is essentially self-centred, and his love and concern for his neighbour is dictated by prudence and expediency. Ethics deriving sanction from this level of moral experience finds expression in "enlightened self-interest" and various "social contract theories". The enlightened self-interest implies that his every action is governed by his own self-interest theories. Even within the limitation of social contract, the impulse which moves one to stick to a contract does not proceed from the sensate level of his personality out from a deeper source. The sensate man, left to himself, would rather break a contract when it suits him than keep it. But the moral man will rise, or at least struggle to rise, above that impulse to upholding the contract, disclosing higher dimension to his personality, long suppressed, but waiting to be expressed. This is his spiritual dimension, the one source of all his higher impulses--moral, ethical, aesthetic and national.

The Spiritual Values

When the cerebral activity ends, or the conditioned psychological personality goes to abeyance, then there is a quantum jump of the relative frame of reference to the absolute rest frame In the absolute rest frame, the unconditioned conscious energy gets activised and it expresses itself as ultimate values of the spiritual values. The absolute rest frame is the trans-sensual dimension; in this dimension everyone receives "intimations of immortality", as Wordsworth expresses it, sometime or other in his life. In the absolute frame of reference, the spiritual values emanating from the inner nature of man govern the ethical values of outer socio-political fields, so all ethical values are essentially spiritual values. The ethical values arising from the absolute field have a deeper connotation as compared to the ethical values arising from a relative field All rational ethical theories should derive their sanction not from any external source but from human nature itself, from totality of experience, from life considering it as one unfragmentable homogeneous wholeness.

The moral education is change from gross ego to subtle ego, and more cultured ego is , the more poisonous it becomes. The more subtle the ego is, the more you will be in its grip Morality always says, "Leave that which is wrong and do that which is right". The spiritual transformation or mutation is the dissolution of the ego, it is the transcendence of the ego. Spirituality says, "Leave that which is false--not wrong, but false. Leave that which is unreal, and enter the real". With spirituality, truth is a value, not right. Because right may itself be false, and in a false world we need false rights to oppose wrongs. The psychological problems cannot be solved through moral education but all problems will vanish through spiritual mutation.

Man bereft of values becomes reduced to a beast Moral education based on relative field is mere husk; moral education bereft of spiritual awareness is useless. Moral education based on spiritual awareness bestows order, music, rhythm, harmony in life If moral education adds to egoism, it must be discarded. The spiritual values and ethical values based on the inner nature of man leads to transcendence of egoism, which is a journey from egoism to altruism, where altruism implies the principal of considering and well-being and happiness of others first, which is unselfishness. There is an altruism-oriented education The spiritual values lead to a quantum jump from a relative frame of reference to the absolute rest frame in the mind continuum.

The spiritual awareness is a happening when one understands the dynamics of mind and lives in the light of that understanding The responsibility of every human being is to act with full understanding, as action out of understanding is complete, and it is fearless. This leads us to conclude that moral education based on the relative field or on a set of 84 abstract values or worlds has no significance in changing the inner content of consciousness or the quality of consciousness and needs to be discarded The challenge is addressed not only to the structure of education but to the nature and equality of man's mind and life Only that education has relevance to human life which gives an understanding as what is actually going on in our own consciousness, in our own behaviour, in our own attitudes; so all education is basically process of right thinking, right measurement and right action. The real education is to understand the dynamics of one's own mind through extension of the modern scientific thought. We opine that holistic education be introduced at the university/college/school levels, where holistic education implies observing objectively the outer and the inner world, the "without" and the "within", this education will enhance the sensitivity of our mind which will result into higher perception. The need of the hour is to introduce holistic education at a collective level-- at the educator level, at the parents' level The holistic education will resolve all human problems and usher in an era of peace, freedom and bliss.

As a matter of fact educationists the world over are concerned about the lack of emphasis on moral education in the system of education. There is an increasing emphasis to orient the education system with spiritual and moral values finding a place of importance. In the world where moral principles and morality are jettisoned quite easily to suit selfish interests, education will have to measure up to the expectations of playing a role of an exalting agency Education is basically a man-making building process.

The education before man is whether he can combine the development of science and technology with the progress of mind and spirit. Education should help spiritual awakening of man. Moral education is not an event. It is a process. Any process needs sound foundation of technique and philosophical support Mere cognitive acquaintance of moral principles cannot bring any change in innerself.

Education should help people appreciate the values of life It should also help the attainment of moral and spiritual knowledge. This appears to be the only solution for the salvation of mankind.

Textbook Language Comprehensibility : A Teacher's View

(DR) J. P. TARANG

TEXTBOOK is a necessity in the school system of India. It is an instructional material with which a teacher very often develops his lesson units for classroom teaching learning. It is commonly observed that textbooks in science and social science are different in their school use from language textbooks. Language textbooks are compulsorily used in the classroom instruction. Be it elementary class or secondary one, language textbooks are used as a powerful material for teaching learning

As regards textbooks in science and social science, good teachers do not use these textbooks in the classroom They use them for preparation of lesson units of the course content and recommend some home-work or exercises from the textbooks. Most of the teachers use these textbooks as readers in the classroom.The students are asked to read the passages one by one. When one concept or subject information is over, the teacher elaborates the content in a simple language Sometimes they also ask certain questions so as to ascertain whether the students have understood what they have read and sometimes to write answers to the important questions given in the exercises after the lesson units

Four major notions have emerged with reference to textbooks for school use· (i) In all school subjects textbook forms a part of literacy, mathematical and scientific components of the curriculum. Textbook appears to be a necessity without which teaching may perhaps become desultory and ineffective. (ii) Textbook supplements but does not replace the teacher. Though it helps both the teacher and the students, yet oral teaching is more vivid and impressive for majority of students and thus they do not consult textbooks for further explanations Therefore, a textbook has to aim at giving information or providing material required for the lesson, leaving to the teacher the choice of method in presentation. (iii) Students learn, in the main, by doing rather than by reading about how a thing should be done. Therefore, textbook indicates lines of study and should not attempt to be exhaustive. (iv) Teachers are trained , skilled and experienced to make instructional use of textbooks. They need not be told what to teach and how to teach the textbook. A textbook is either a teaching tool to the teacher or it provides a subject matter of a lesson unit.

What is a textbook to a teacher? What is textbook language comprehensibility to him ? What is the relationship of textbook material and comprehension on the part of the students ? How does the teacher enhance the textbook language comprehensibility? What should a teacher know about his/her students whom he/she meets in the classroom with a textual lesson unit? These are some of the questions that pose problems to provide the teacher's views on the language comprehensibility of textbooks

The textbook, if it is of some help to a teacher for instructional purposes, has to take into account three aspects viz --(i) intent, (ii) content, and (iii) effect. Intent is concerned with instructional objectives, on the one hand, and the needs and language abilities of the students -- their motivational aspects, age, interest and aptitude, on the other. We need not dwell on this point to discuss psychological reunification of this issue. What needs to be noted is that it makes it necessary for a teacher to pretest and maintain a profile of individual and group competence levels. For this, research should provide basal informations on (i) regional details of dialect/s/and learner's mother tongue factor, (ii) constrastive details of dialect and first language factor, (iii) compositional details of falk narration of the area, etc.

Content is the textual material in the print. It consists of lesson text, illustrations and exercises mainly. All of these are interwoven to present the essentials of the content Illustration plays an extra-linguistic role to make the language communication easier and interesting. Exercise questions on thematic comprehension and language use provide an opportunity to the teacher to understand the extent of the content and depth of the subject matter/material of the textual lesson.

With this content is involved the classroom management of the language used by the teacher and the students during the teaching-learning period. Instructions, directions, questions, enquiries, responses, etc. form the total body of the content, more meaningful for language comprehensibility.

Effect is mainly concerned with what students achieve, not only with regard to intent of the teacher but also with regard to content and the use of a textbook, which 'intent' may or may not have taken into account.

If we look at the instructional design pertaining to the prose lesson-units of first language textbooks, we can very well understand and appreciate the role of comprehensibility of language used in the first language, textbooks, which will be further referred to as textbooks. It sheds focus on the real coverage of the textbook and provides opportunity to the teacher to enhance the comprehensibility of the language used in the language textbook. The clearness, simplicity and graduation of the textual material -- thematic as well as linguistic -- should be assessed or measured in the light of the instructional treatment given to the textbook lesson-unit.

This instructional design can be better explained through description of what a teacher does in the classroom--job analysis with a textbook lesson unit.

From intent to statement of aim the teacher visualizes the previous knowledge/ experience/ competencies of the students. Teaching experience helps a lot in devising introduction of the lesson unit The teacher motivates the learner, predisposes him to participate in the planned teaching-learning activity based on the textual content of the lesson unit. He makes a statement of aim to the students for the lesson in hand.

Common content activities leading to comprehension are as follows:

I. *Reading Performance*

> *Instruction* Open your book on page so and so. Look at the passage that I read. You are expected to read the passage in the same way

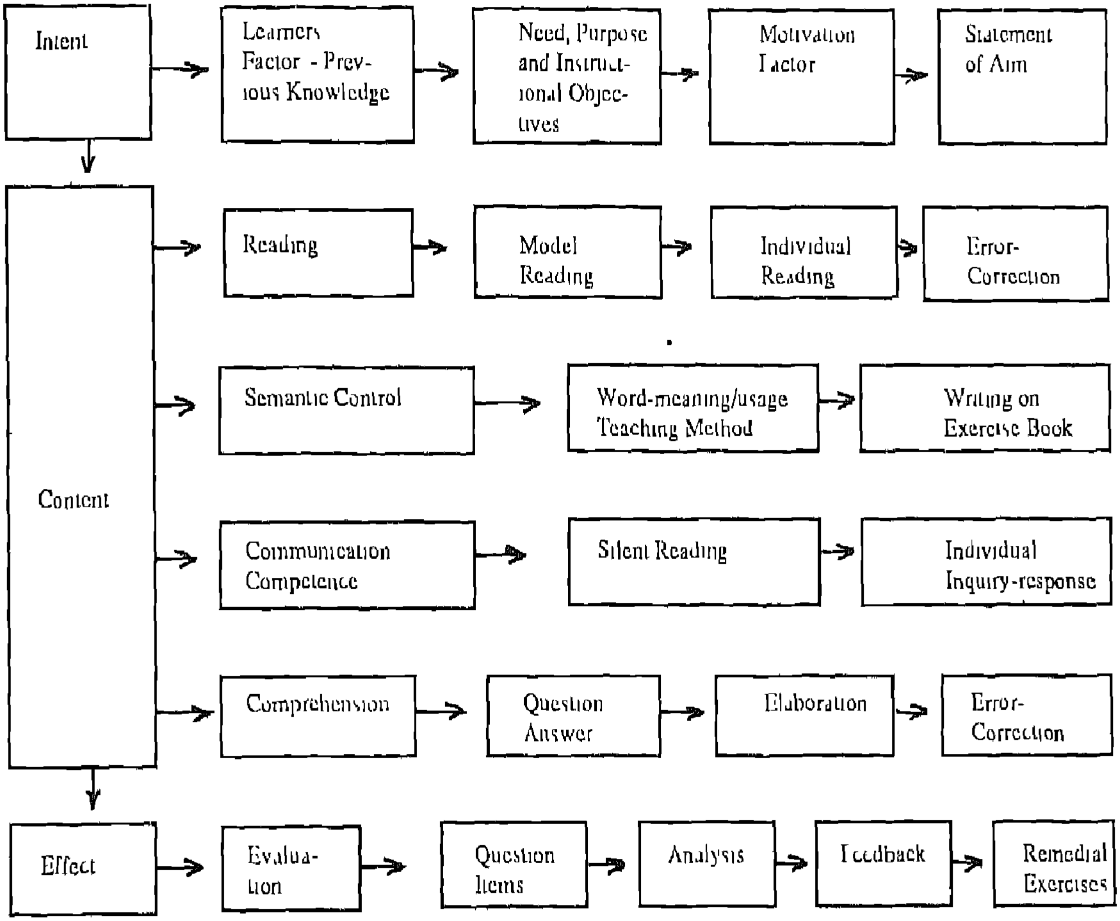

FIG 1 Instructional Design of Activities in the Classroom with a Lesson-unit

Model Reading: The teacher presents model reading to the students with correct pronunciation, appropriate intonation and proper stress and speed.

Management The teacher stealthily supervises the students in the classroom for active involvement of the students in the task of looking at visual presentation (language) and listening without disturbance. Disturbance, if any, is checked then and there.

Loud Reading by Individual Students

Individual Reading Instruction: The students are named to stand and read the passage/s Three or four students are given this opportunity in a well-distributed manner Other students are also asked to note mistakes, if any, and inform when asked for.

Management: If the individual reading is up to the mark, the next student is asked to read. If there happens to be any mistake, queries are made. The students are involved to mark the mistake and correct it. The correction is repeated by the faulty reader. The reading is correctly performed. In case no student is able to detect the error/correction, the teacher himself does it.

3. *Semantic Control*

Word-meaning: After writing a word/usage on the black-board, the teacher uses a method to present the word/usage in simple and familiar context on the part of the students and elicits the meaning of the word/usage from the students. In case of failure he himself tells the meaning. In both the cases the meaning is written on the black-board against the word. The students are asked to write the word and its meaning on the exercise books.

Management. The teacher supervises well whether the students are doing it on their exercise books. If any student asks the meaning of any other word in the lesson-unit, it is told by the teacher then and there

4. *Communication Competence*

Silent Reading : The students are asked to read the passage/s silently with understanding. Later, the teacher asks questions to see if the pupils have understood the passage/s well. If a student finds any difficulty, he is asked to stand up and enquire quietly.

Management: The teacher supervises silent reading He does not allow the students to whisper or talk. He removes difficulties of individual students. Mostly these difficulties lie in the area of word-meaning. The teacher finds the vocabulary difficulty of the content in this exercise

5. *Comprehension Activities*

The teacher asks questions and the students respond The order of the questions is easy to difficult. In this drill the teacher provides opportunity to the pupils to reach the desired level of achievement. Exercises on language use and grammatical items are also practised after this drill of comprehension.

Management: Error correction is done with the help of the students. Elaborations are made by the teacher to provide the students better expressions of responses. Practice in grammatical items is supervised well.

6. *Formative Evaluation Activity*

To assess the achievement of the instructional objectives, some items in the form of questions are given and their mastery level performance is tested. Those who fall short of the mastery level performance, are again asked to read it and do proposed remedial exercises.

This description of instruction design provides an insight into the reality of language textbooks use As parts of the pre-teaching preparation and planning the lesson the teacher must know to assess the degree and nature of the stumbling blocks to comprehension with a passage or textbook.There is a need to develop some measuring or assessing strategies for comprehensibility of language used in the language textbooks.

The assessing systems and tests based on readability formulas do not account for concept load, organisation-composition or logical, creative and critical style, students' familiarity with the subject or students' motivation and purpose. The linguistic analysis of words and sentence length remains a major concern of decodability rather than the comprehensibility of language. Comprehension of a text material implies the understanding of the language used in the textbook. It means understanding the meaning of the words, phrases and sentences used in the content or subject matter of the textbook The content in the textbook consists of paragraphs which are composed of interrelative sentences, phrases and words. So the assessing analysis can be based on intrasententional level and vocabulary level in a given context The comprehension processes are also to be cared for.

For developing assessment strategies for measuring comprehensibility of language in the textbook, a theoretical and empirical study of comprehension process is essential. The models of studying comprehension during reading and analysis techniques thereof should be developed to encourage a reasonable hypothesis as to relative difficulty a reader may encounter in a particular passage, the specific text-lesson that may present problems and the reason for those problems. Any research in this area shall be based on certain assumptions that emerge out of this discussion regarding the language textbook use in the school since it is the major concern of the teacher and not of the student. So why to test a student on tests of comprehensibility, why not a teacher.

A word of caution from the teacher's side is that the Western models of research in this area are perhaps not useful for our purpose as there teaching-learning materials are quite different from our textbooks in concept, approach, presentation, purpose and need. The role of teaching-learning materials in the advanced countries of the West is definitely different from the role of the textbooks in Indian context. There are many publications on one lesson unit at various communication levels -- higher, average and low achievers Their presentations are also available in various styles Every school teacher is at liberty to choose and recommend the material he/she can prepare for his/her own instructional material at school level geared to the need of their children In addition to the teachers' preparation of the material, the publishers in the profession prepare best material duly validated and evaluated by the experts The curriculum or curriculum guides do not prescribe any material but course content. So many local problems -- linguistic and thematic -- are well taken care of by teachers, publishers or reading researchers

In our context, the role of textbook has been discussed through instructional design of classroom activities. Our researches in the comprehensibility of language used in the textbooks and learners' capabilities and barriers to understand the language are not properly devised and objectified In the field of education academicians ignore the reality of school education in the Indian context. They study researches undertaken abroad and apply them in the Indian system of schools. This exercise very often uses abtruse words or jargons so as to confuse the compounded situation and research findings. This further leads to blurring the implications of their findings and so their benefits appear to be of little use to the teachers.

The propriety, purpose and need of research in this area require a fresh look. The major thrust should be to benefit the teacher in the art of developing an assessing system for preteaching, preparation and lesson planning. Secondly, to benefit those who are preparing textbooks The other important area of research is to identify graded and levelled vocabulary on the basis of learners. There is a need to study the status and communicative factors of dialect, regional language and national language in different settings -- rural, urban, labour colony, slums and areas of distinct population.

The basic assumption of a textbook sometimes leads to darkness rather than enlightening the users. Any study on the assumption that a textbook is meant for self-learning and understanding on the part of the students with special reference to first language textbook puts the best research on a wrong track With this view in mind areas of research should be worked out to study the comprehensibility of the language used in language textbooks.

Teaching Science at the University of the South Pacific : Its Special Problems

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THE University of the South Pacific (USP) is a regional University serving the needs of 12 countries in the south and central Pacific: Cook Islands, Fiji, Kiribati, Nauru, Niue, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Western Samoa and the Marshall Islands. Students from Fiji account for approximately 90 per cent of the total intake and this group comprises equal numbers of indigenous Fijians and Indians At present there are two modes of entry into the University. Students can either enter a foundation year after six years of high school before proceeding to degree level. Alternately it is possible to enter directly into the degree 100-level after seven years of high school. All Bachelor degrees consist 3-year courses.

For some time there has been concern expressed about the poor performance and high attrition rates among science students at the USP (UNESCO 1988). In particular this concern focused on the apparent inability of many students to think analytically and apply their knowledge and understanding in novel situations. In an effort to assess the extent of the problems facing students and identify major areas of weakness, all foundation level and degree 100-level science students sat a diagnostic test at the start of the 1991 academic year.

This paper discusses the test results and in particular it examines the common errors which occurred. Comparisons are made between the performance levels of Fijian and Indian students.

Methodology

The test items were adapted from the United Kingdom General Certificate of Secondary Education (GCSE) science papers. The GCSE is a national summative examination for students in their twelfth year of schooling. The items chosen were intended to test the students' application skills (Bloom 1956) rather than the recall of factual information Thus items tested the ability of students to organise and present data effectively, to interpret various data, to write and balance chemical equations and complete various scientific calculations

Those items which could not be scored objectively were scored analytically to increase reliability (Mehrens and Lehmann ,1984). The mean scores were compared using a t-test.

Results and Discussion

TABLE 1

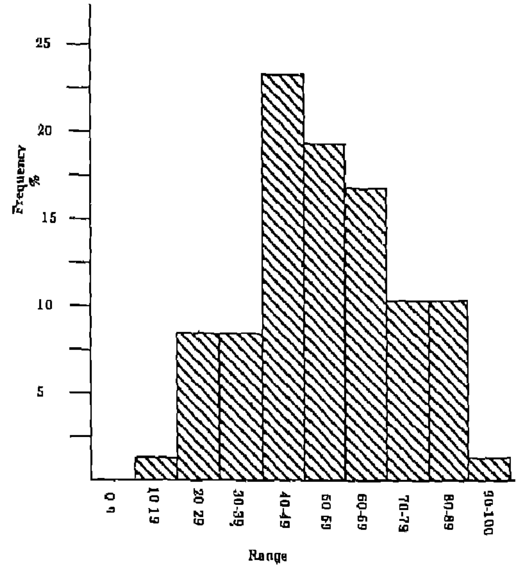
The Mean Scores of Various Groups within the USP

Group	Mean % Scores (MS)	Number (N)	t	Remarks
Total	55.3	302		
Foundation students	55.5	213		
100-level students	54.9	89	0.26	N.S
Indians	67.2	107		
Fijians	47.5	136	9.4 P	<0.01
Other Pacific Islanders	47.9	48	0.29	N.S
Male	56.7	180		
Female	53.5	122	1.51	N.S

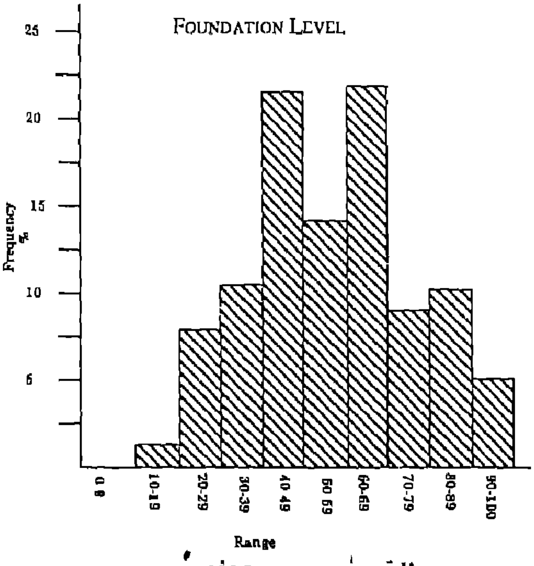
It is always difficult to make judgements on the performance level of the students in any test. For example, is a mean score of 50 per cent of the maximum possible a good result? Answers to this question involve judgements against expectations which may vary from one person to another

Having said this, perhaps the most striking feature of the results of this comparatively simple high school science test was the very wide score distribution (Fig. 1). Within any group one would expect to encounter a variation in performance, but by the time students have reached tertiary level, the various selection processes should have narrowed this significantly.

At the foundation level almost 20 per cent of the students failed to score about 40 per cent while at the degree 100-level 17 per cent failed to reach this mark. This indicates that a significant minority of the students had considerable difficulty with the test Conversely, 24 per cent of the foundation students and 22 per cent of the students at the



FOUNDATION LEVEL



100 LEVEL

FIG 1. The Score Distributions for Foundation and 100-Level Science Students

100-level achieved a score of 70 per cent or more and apparently encountered little difficulty. This disparity in performance would suggest that the teaching of science at the USP must present particular problems, especially as none of the usual mechanisms which facilitate teaching a wide range of students, such as ability grouping, exist at the university.

Analysis of the test items revealed a number of problems Over 40 per cent were unable to balance a chemical equation In producing the equation for the production of ammonium sulphate, $2NH_3 + H_2SO_4 \text{-----} (NH_4)_2\ SO_4$, it was common for the students to balance the equation for one substance, for example hydrogen, but leave the others unbalanced.

Information is given below about the nitrogen content and the solubility of four fertilizers W, X, Y, Z

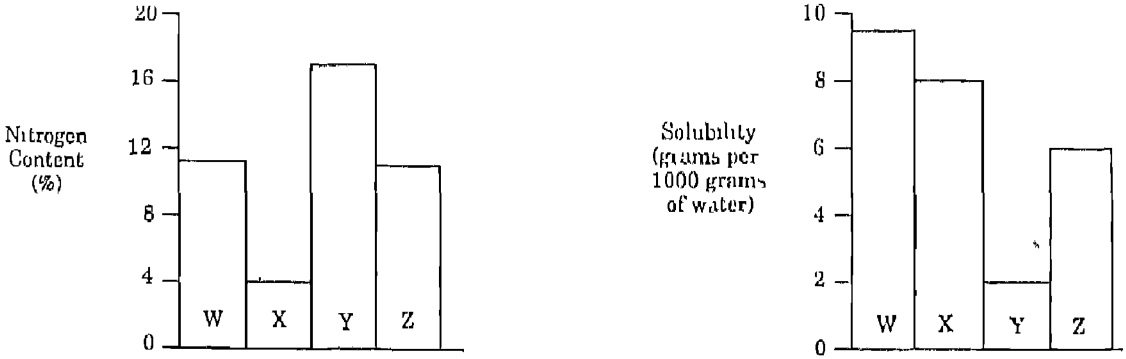


FIG 2: Item 6 from the Diagnostic Test

(a) Which fertilizer contains the highest percentage of nitrogen ?
(b) Calculate the number of grams of X that will dissolve in 1000 grams of water.
(c) How many grams of nitrogen are supplied if 500 grams of fertilizer Z are spread over the ground ?
(d) Which fertilizer you use for a crop that needs high content of nitrogen but is sown in the part of a country which has a heavy rainfall ?

The items which involved data analysis also proved difficult for many students. For example, fewer than 50 per cent of the students scored full marks for the item shown above.

This was mainly because the students were unsure of which histogram to use when answering different sections of the question.

Major weaknesses were also revealed in the students' ability to manipulate and interpret the data One item required the graphing and interpretation of the data on the rate of the chemical reaction $2H_2O_2 \text{-------}\!\!\rightarrow H_2O + H_2$ as temperature increased. The graphs produced by 35 per cent of the students revealed a number of common errors. These included confusing the dependant and independent variables, fitting straight lines through obvious curves and failing to join the curves to the origin. Most students were able to relate the increase in the rate of the reaction to the increasing temperature, but many individuals simply suggested that increasing temperatures produced more gas. About three per cent of the students related the results to photosynthesis or evaporation, and a similar percentage related them to Boyle's Law.

The analysis of the test items showed that many students had not acquired the scientific skills necessary to equip them for degree level science This points to inadequacies in the teaching of science at high school level in the South Pacific. Certainly the research carried out in Fiji would bare this out. Whitehead (1986) reported that the teaching of science in many schools in Fiji was very bookish rather than based on experiments and discovery techniques Muralidhar (1989) confirms this, and cites a number of incidents where he observed teachers 'doing' experiments on the black-board. During the observation of 289 science lessons in Fiji he seldom saw students getting actual "hands on" experience of science.

Evidence from the literature on science education supports an active model of teaching (Tobin et al. 1988). Wongkor and Rennie (1990) have shown that Indonesian students taught chemistry using a student-centred approach recorded substantially higher cognitive achievements than control groups taught using the traditional lecture-discussion approach. More recently work by Robinson and Niaz (1991) revealed that the students in an interactive classroom were more successful at solving chemistry stochiometry problems than the students in a traditional lecture.

However, many science teachers in the South Pacific are suspicious of anything other than a teacher-centred approach to science education (UNESCO 1990). One reason why this situation prevails is because changes in the science curricula intended to develop science skills have not been matched by equivalent changes or developments in pupil evaluation procedures (Taylor 1991). This disparity creates confusion in the minds of the teachers If the curriculum emphasises scientific processes but the evaluation procedure emphasises recall of scientific knowledge, it is likely that the former will give way to the latter and the teachers will stress scientific knowledge. This is a problem common to many developing countries where the style of national examinations tends to be a more important determinant of the content and process of teaching than syllabuses. Research indicates that the vast majority of questions asked in school examinations in developing countries test factual recall, rather than comprehension or application skills. This encourages the rote teaching of factual information and places a low premium on the relevance of such teaching to the students' own lives. Classroom teaching, therefore, tends to be characterised by a formalistic, didactic style (Vulliamy 1988).

Certainly, according to Whitehead (1986), the teachers in Fiji are firmly wedded to examination pass rates as a measure of their success As a result, they employ the strategy best suited to achieving high pass rates, namely a teacher-centred approach to the point of rote learning. This may gain the desired results but is unlikely to encourage the development of higher cognitive skills

As Dallas (1984) stated, "it is reasonable for teachers of older pupils to aim for the best possible public examination results, but it is shortsighted and damaging to the pupils' best interests if the teacher insists on making life easy for them by employing teaching methods which require little of the victim but sponge-like absorption power. Should the pupil finally reach the desired goal of higher education, the lack of skills essential to make full use of what is offered there leads certainly to anxiety, if not to frustration and failure". This is what is happening in certain cases at the USP, where many students show a deficiency in scientific skills.

Analysis of the test scores also revealed a marked gap in performance between indigenous Fijians and Indians. This is perhaps not surprising in view of the findings of Stewart (1983) who discovered that Fijian students did not perform as well as Indians in science and mathematical subjects at any level. To support this he cited science pass rates in the Fiji Junior Certificate Examination for 1980 which were 33 per cent for Fijian students and 44 per cent Indians while those for the New Zealand Secondary Certificate for the same year were 15 per cent for Fijians and 30 per cent for Indians.

A number of studies have shown that the difference in science performance is not related to general intelligence or language competence, where Fijian and Indian students' scores are not significantly different (Chandra 1975A and Elley and Thomson 1978, 1979).

However, both Basow (1982B) and Kishor (1982,1982B) have shown lower levels of self-esteem in Fijians as compared to Indians. The teachers know the importance of a healthy sense of self-esteem in students for successful achievement in the classroom. Students are more able to take risks (of exposing their possible ignorance or coming up with original solutions) If they have a basic sense of confidence.

Also significant is the finding by both the above authors, of a more *external* locus of control among Fijians than Indians. This represents a tendency to attribute one's successes and failures (say on a class test) to external factors such as luck or favouritism of the teacher. An *internal* locus of control is shown when one would attribute success or failure to internal factors (e.g hard work). With an *internal* locus of control one would be seen as dependent on one's own efforts rather than external factors over which one has no control There is need for more research on achievement motivation in Fiji.

Thus teaching science at the USP presents a number of special problems. However, according to Buckingham (1989), the university may be coping with these problems by taking the course of least resistance. He felt that examinations were too closely tied to previous class tests or tutorial sessions, with students being "coached" to the correct answer rather than meeting a question for the first time. Unfortunately, this is a perpetuation of the school system which helped to create the problems in the first place It is very difficult for the science departments of the university to make up for the deficiencies in the school system. However, perhaps by putting greater emphasis on the development of scientific thinking and problem-solving skills at the expense of course content some progress can be made In this way it may be possible to make some inroads into a self-perpetuating system based largely on knowledge memorization.

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Correlation of Teachers' Classroom Communication Patterns and Personality Traits

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REALISING the importance of teachers' personality traits in determining their professional success, the Education Commission 1966) observes that "of all the different factors which influence the quality of education and its contribution to national development, the quality, competence and character of teachers are undoubtedly the most significant"

Lack of personal touch between the teacher and the taught in the classroom is often attributed to the very absence of the desired personality of the teacher. The absence of the eacher's personality is also responsible for the absence of meaningful and effective teacher-pupil relationship A review of the related studies reveals the fact that the teachers' communication patterns in the classroom are the key variables in developing the classroom climate. It is obvious that the teacher's classoom behaviour is affected mainly by his personality traits. Hence the investigator was nterested in identifying the personality traits of he teachers which influence flexible interaction n the classroom.

Objectives

The objectives of the present study were as follows:

1. To study the communication patterns of teachers teaching detailed English text in the classroom.
2. To identify the personality traits of the teachers which influence their different communication patterns in the classroom

Tools Used

The following tools were used for the collection of the data:

1. Modified version of Flanders' Interaction Analysis Categories System, was used to observe the teachers' classroom behaviour Flanders' system concentrates only on verbal interaction between the teacher and the taught. It is a fact that non-verbal behaviour is also important so that more insight can be gained into the teaching behaviour Hence T R. Soundararaja Rao

added seven more categories to Flanders' system. The investigator replaced two of Dr Rao's categories with two new categories so as to make the tool more suitable for language teaching.

2. To assess the teachers' personality traits, Cattell's 16 Personality Factor Inventory was used. It is a cross-culturally standardised tool.

Sampling Design

The sample comprised of 11 male P,G teachers and four female P.G. teachers teaching English at the higher secondary level in 15 schools in Coimbatore district. Of them, seven teachers taught Tamil-medium classes and the remaining eight taught English-medium classes. While four of them were working in the rural area, the remaining 11 represented the urban area Three of these teachers were working in Government schools, seven in local body schools and the remaining five in private schools.

Methodology

Since the study deals with the behaviour of the teachers, observation is the best suited method for data collection regarding teacher behaviour. Using the modified version of FIACS, the investigator observed all the selected teachers teaching detailed English text at Standard XII level, each for one period 17 x 17 matrix was prepared for each of these teachers, based on their observation records. Scores on different ratios representing different communication patterns were computed with reference to their individual matrices The ratios were then analysed in relation to their personality traits.

To assess the personality traits of the teachers, Cattell's 16 Personality Factor Inventory was administered. Using a stencilled score key, their responses were scored. The raw scores were then converted into equivalent sten scores, using the appropriate norm table Based on the 16 primary sten scores, the scores of four second order factors, viz. Introversion-Extraversion, Low Anxiety-High Anxiety, Tender-minded-Emotionality-Tough Poise, and Subduedness-Independence were derived

Analysis and Interpretation of Data

The knowledge of how much the teacher or the pupils talked in the classroom becomes much more useful when it is combined with some index of quality. Hence the investigator computed the following ratios representing different communication patterns of the teachers, based on their individual matrices.

1. Indirect Influence to Direct influen Ratio (I/D)
2. Teacher Pupil Ratio (T/P)
3 Teacher Question Ratio (TQR)
4 Teacher Talk Ratio (TTR)
5. Pupil Talk Ratio (PTR)

The distribution of the mean and SD of the scores of different ratios of the teachers teaching detailed English text are given in Table 1.

TABLE 1

Distribution of Mean and SD of the Scores of Different Ratios

Sl No.	Measure	Ratios of Different Communication Patterns of Teachers				
		I/D	T/P	TQR	TTR	PTR
1	Mean	0 182	6 81	15 66	61 66	8
2	SD	0 132	4.51	9.81	9 75	4.27

From the preceding table it is found that:

1. Almost all the teachers are direct in their influence patterns by expressing their own views through lecture, giving directions and criticising the pupils with the expectation of compliance which tend to restrict the pupils' participation in the

classroom discussions.

2. Most of the teachers dominate their pupils in the teaching-learning process
3. The tendency of the teachers to ask questions in the classroom is not adequate
4. The teachers talk more than 60 per cent of the time in the classroom discussions
5. Most of the teachers do not give adequate chances to their pupils to express their ideas in the classroom discussions.

The distribution of the mean and SD of the scores of the teachers' second order personality factors is given in Table 2

TABLE 2

Distribution Mean and SD of the Scores of the Teachers' Second Order Personality Factors

Sl No	Measure	Second Order Personality Factors			
		Extraversion	Anxiety	Tough Poise	Independence
1.	Mean	4 26	6.99	3.91	5 29
2	SD	1 6	1 16	1 7	1 12

(N B· Maximum score for each factor is 10)

The following are the conclusions derived from the preceding table.

1. Most of the teachers are found to be introverts by being shy, self-sufficient and inhibited in inter- personal contacts.
2. Most of the teachers are found to have high anxiety by being dissatisfied with the degree to which they are able to meet the demands of life and to achieve what they desire.
3. Most of the teachers are found to be tender-minded emotionally by being troubled by pervasive emotionality and a discouraged, frustrated type.
4. The mean score of 'Independence' being found to be very near the midpoint, it is concluded that most of the teachers are in between subduedness and independence.

To identify the personality traits of the teachers which influence their different communication patterns in the classroom, the investigator attempted to work out the correlation co-efficients between the scores of the teachers' behaviour ratios and their personality traits, using Pearsons' Product Moment method.The results are given in Table 3

TABLE 3

Correlation between the Scores of Second Order Personality Factors and Teacher Behaviour Ratios

Sl No	Teacher Behaviour Ratios	Second Order Personality Factors			
		Extraversion	Anxiety	Tough Poise	Independence
1	I/D	-/07	- 147	- 06	273
2	T/P	202	.142	- 369	- 483
3	TQR	- 07	-.09	104	282
4	TTR	31	-.305	.577*	- 125
5	PTR	274	-.013	039	424

*Significant at 0 05 level D F. = 13

From the above table it is found that there is negative and significant correlation between TTR and Tough Poise at 0.05. level. There is no correlation between Extraversion and I/D and TQR. But it correlates positively but not significantly with T/P, TTR and PTR.

There is no correlation between Anxiety and TQR and PTR. But it correlates negatively but not significantly with I/D and TTR At the same time, it correlates positively but not significantly with T/P.

Tough poise does not correlate with I/D and PTR But it correlates negatively but not significantly with T/P. At the same time, it correlates positively and significantly with TTR at 0.05 level. It has positive but not significant correlation with TQR

Independence correlates positively but not significantly with I/D, TQR and PTR But it correlates negatively but not significantly with T/P and TTR

Hence it is concluded that Extraversion as a personality factor influences the teachers to be direct in their interaction patterns which restrict the students' participation in the teaching-learning process It is also seen that Extraversion influences the teachers to provide more chances for the pupils to express their views in the classroom discussions.

Anxiety as another personality factor influences the teachers to be indirect in their communication patterns which encourages the pupils' participation in the classroom communications. It also influences the teachers to dominate the pupils in the classroom discussions.

Tough poise as another personality factor influences the teachers to talk more and more in the classroom discussions It is also seen that it influences the teachers to be. less dominant in the classroom.

Independence as one more second order personality factor influences the teachers to be more indirect in their communication patterns, less dominant in their interaction patterns, asking more questions in the classroom discussions and providing more chances for the pupils to express their ideas and feelings in the classroom discussions. It also influences the teachers to reduce their talk in the classroom

In order to validate the findings of the correlational studies, the investigator attempted to find out the significance of difference between the mean scores of different teacher behaviour ratios of high and low range scores with regard to the second order factors, viz. Extraversion, Anxiety, Tough Poise and Independence Table 4 gives a summary of the differential studies where the mean differences are significant

From Table 4, it is found that there is significant difference between the mean scores of TTR and PTR of high and low range scorers with regard to Extraversion at 0 05 level. High range scorers of Extraversion scored more than low range scorers on TTR But low range scorers scored more than high range scorers on PTR

TABLE 4

Significance of Difference between the Mean Scores of Different Teacher Behaviour Ratios of High and Low Range Scorers with Regard to Second Order Factors

Sl No	Second Order Personality Factors	Teacher Behaviour Ratios	N1	M1	σ_1	N2	M2	σ_2	D	σ_D	t
1	EXT	TTR	9	57 99	10 33	6	67 17	5 2	9 18	4 05	2 27**
2	EXT	PTR	9	9 52	4 05	6	5 72	3 51	38	1,97	1 93*
3	ANX	T/P	6	4.48	1 7	9	8 36	5,09	3 88	2 07	1 87*
4	TOU	T/P	8	7 86	5 66	7	5,6	2 01	2 2	78	2 82**

**Significant at 0,05 level

* Significant at 0,1 level

Hence it is concluded that Extraversion influences the teachers to talk more in the classroom. At the same time it influences the teachers not to provide chances for the pupils to talk in the classroom discussions

It is also found that high range scorers of Anxiety scored more on T/P than low range scorers. It means that Anxiety influences the teachers to be more dominant in the classroom

Again, it is noticed that low range scorers of as follows:

1. Teachers who are socially outgoing, uninhibited and good at making and maintaining interpersonal contacts restrict pupils' participation in the teaching-learning process by expressing their views through lecture, giving directions and criticising the pupils with the expectation of compliance from them
2. Teachers of high anxiety who are dissatisfied with the degree to which they are able to meet the demands of life and to achieve what they desire, encourage pupils' participation in the teaching-learning process by accepting, clarifying, praising and developing the ideas and feelings expressed by the pupils.
3. Teachers with tough poise who are enterprising, decisive and resilient and those who involve in rapid action with insufficient considerations and thought tend to talk more and more in the classroom discussions. However they are less dominant in the classroom.
4. Teachers who are aggressive, independent, daring, indecisive and exhibiting considerable initiative involve the pupils in the teaching-learning process.

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Concrete Materials and Guided Self Study for Learning Chemistry

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THE National Policy on Education -- 1986 envisages a drift from the traditional lecture method to the child-centred approach to learning. It has been realised that teaching is not telling, memorizing is not learning, and reproducing something in the examination is not an evidence of understanding The new teaching-learning process should involve the presentation of new ideas and knowledge at the level consistent with the child's stage of mental development. Also, the new process should help an individual to develop the habit of self study, a spirit of inquiry, an ability of planning and decision-making. It is also necessary to promote social interactions among children so that they cooperate with their friends, share their experiences, discuss their discoveries and argue out their differences of opinion.

Keeping in view the above requirements, a learning strategy comprising of concrete materials for understanding formal level concepts in chemistry and guided self study was developed and tried out on a pilot scale.

Concrete Materials for Comprehension of Formal Level Concepts

The necessity of providing concrete materials for understanding formal level concept arises due to the large differences exhibited by the students in their abilities to understand science concepts and to apply them to new situations The differences in behaviour of the students have been explained by the theory of human intellectual development by Jean S Piaget[1] Briefly Piaget has characterized human intellectual development into four stages These stages are the periods in which a person's behaviour shows certain distinctive features in terms of reasoning patterns that are used for comprehension of knowledge and problem solving The first two stages, known as sensory motor and preoperational stages, are usually completed when a child is 7-8 years old The third and fourth stages, known as concrete operational and formal operational stages, are supposed to be completed between 8-11 years and 12-15 years of age, respectively The latter two stages are more relevant to the students studying in upper primary and secondary stages of school education. Each stage of mental development is characterized by a set of logical operations which an individual uses when facing certain problems

At the concrete operational stage, the student is able to carry out the logical operations based on concrete objects, familiar actions and direct experiences. These operations include classification, arranging data in serial order, establishment of one-to-one relationships between set of data and conservation of mass. At the formal operational stage, the student is not restricted to observable data and familiar situations but applies the logical operations to concepts, synthesizes, generalizes and understands mathematical relationships. The understanding of concrete and formal level science concepts requires the use of logical operations at the concrete operational and formal operational stages, respectively Students at the concrete operational stage face difficulties in comprehension of formal level concepts[2]. The use of concrete materials such as charts, models, activities, simple experiments, analogies, more lucid explanations, relating content material to familiar situations, and other manipulable material based on concrete thought has been found beneficial for concrete level students in comprehension of formal level concepts[3,4]

Guided Self Study

Guided Self Study provides a chance to the students to study of their own and get the guidance only when it is needed. It was implemented in the classroom by applying Individually Guided System of Instruction[5] (IGSI) which comprises of self study, guidance from tutor, self pacing and mastery learning. Briefly, in this system, the course content for one year is split into units such that each unit is covered in 6-8 periods of 35 minutes duration. The entire Class IX chemistry course is split into 12 units. For each unit, the student is given a study guide which contains an introduction to the unit, objectives of the unit, suggested procedure for achieving the objectives, notes, problems and self assessment The concrete material is incorporated at appropriate places under suggested reading material for comprehension of formal level concepts.The teacher spends 1-2 periods in introducing the unit and explaining difficult terms, and concepts, showing charts, films and demonstrations. Then every student studies the unit on his own with the help of the study guide and tries to complete the unit before the preannounced date for introduction of the next unit. When a student finds any difficulty in understanding certain portion of the unit, he or she takes the help of the tutor on individual basis The tutor is generally a senior student who has chosen tutoring as a part of Socially Useful Productive Work (SUPW) activity The SUPW is compulsory for all students at all stages of school education in India. A tutor is provided for every six students.

After a student completes the unit, his tutor administers a test which he grades in the presence of the student. The test is written as well as oral. The unit tests used in the present study are the criterion referenced tests If the student passes the test, he is allowed to move on to the next unit, otherwise he is advised to restudy. After suitable preparations, the student takes another test. For each unit, five assessments of equal standards were developed. The process of testing is repeated unless the student passes the unit by achieving the predetermined high level of achievement. The student is encouraged to complete a unit before the teacher introduces next unit on a preannounced date. But no formal deadlines are imposed Thus the students progress under guided self study, at their individual pace.

The present experiment was conducted in

two sections of Class IX in two different schools. Eight students of Class XI were used as tutors. The instruction to one section of Class IX in each school was assigned to experimental treatment and the other section to control treatment The experimental and control groups of students in both the schools were made equivalent on the basis of their previous performance The classroom conditions of the control and experimental sections were maintained as similar as possible. At the end of the academic year, a common examination was given for comparison.

Results and Discussion

It was found that the performance of the students in the experimental group in both the schools was better than that of the control group of students. The average increments in percentage marks of the experimental groups are shown in Table 1. A comparison of the achievement

TABLE 1

Sl No	Name of School	Average Percentage of Marks		
		Control Group	Experimental Group	Average Increment(%)
1	Motilal Nehru School of Sports, Haryana	47	56.3	9.3
2	Apeejay School, New Delhi	62.3	73.4	11.1

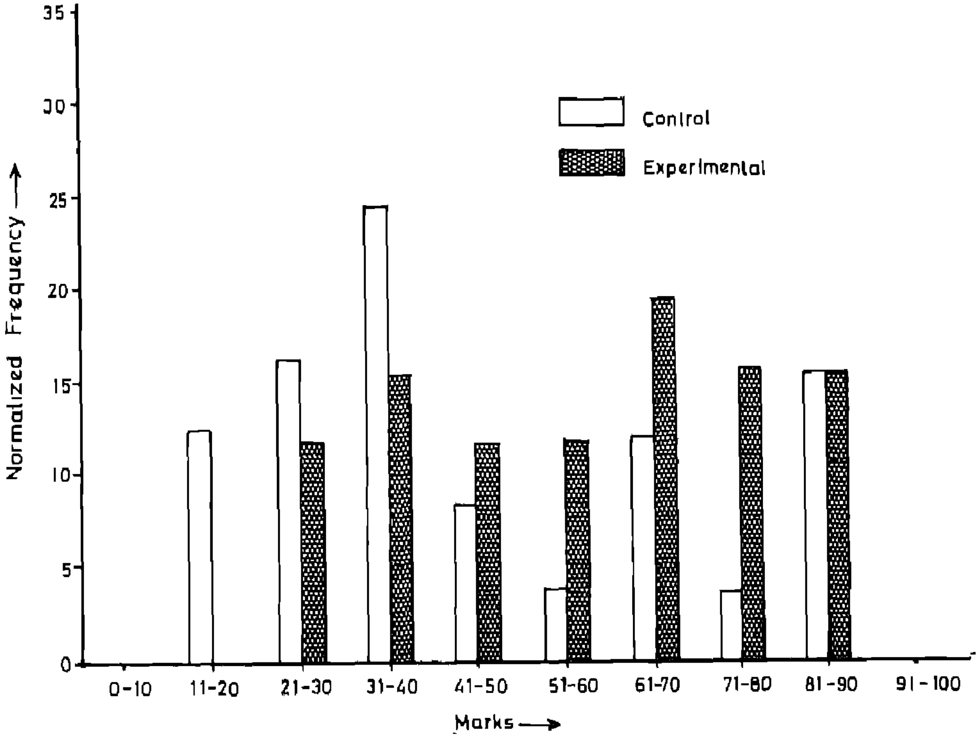

FIG. 1 **Comparison of the Results of Common Examination of the Control and Experimental Groups of Motilal Nehru School of Sports, Haryana**

(Empty Bars Represent the Results of the Control Group and Filled Bars that of the Experimental Group of Students)

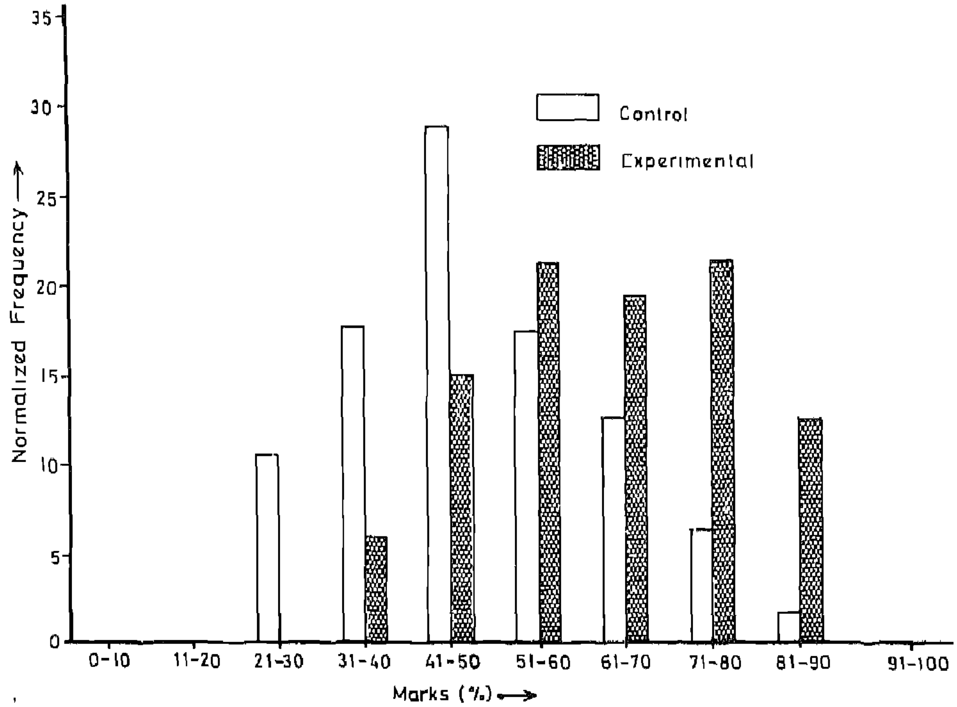

FIG. 2 Comparison of the Results of Common Examination of the Control and Experimental Groups of Apeejay School, New Delhi.
(Empty Bars Represent the Results of the Control Group and Filled Bars that of the Experimental Groups of Students)

of the control and experimental groups of students is represented by diagrams in Figures 1 and 2 The filled bars represent the achievement of the experimental group and the empty bars that of the control group of students.

A glance at Figure 1 which represents the results of the try-out in Motilal Nehru School of Sports, Haryana, shows that the height of the filled bar at 11-20 per cent marks interval has become zero, and at 21-30 and 31-40 per cent marks intervals, it has appreciably reduced. This indicates a decrease in the number of low achievers in the experimental section. The increase in the heights of the filled bars at 41-50, 51-60, 61-70 and 71-80 per cent marks intervals indicates that the number of students obtaining higher marks is significantly greater in the experimental section.

The bar diagram in Figure 2 represents the results of the try-out in Apeejay School, New Delhi. In this, the heights of the filled bars at 31-40 and 41-50 per cent marks intervals have appreciably reduced. It has become zero at 21-30 per cent marks interval. Also, there is an increase in the heights of the filled bars at 51-60 and 61-70 per cent marks intervals and an appreciable increase at 71-80 and 81-90 per cent marks intervals. This indicates clearly an appreciable increase in the number of students obtaining higher marks in the experimental section.

At the end of the academic term, the students' reactions on the use of the present experimental approach were collected through a questionnaire and personal interviews. Out of 70 students, 63 wanted this type of material to be used in other subjects as well Fifty-two students gave recommendations in favour of guided self study approach for learning Fifty students recommended the use of concrete materials and guided self study to other classes as well

Conclusion

The results of the present pilot study clearly indicate the effectiveness of concrete materials combined with guided self study in learning chemistry. The low as well as average achievers were benefited as a result of the present experimental approach It also helped in mastering the subject

The use of simple concrete materials has been associated with teaching formal concepts to the students at the concrete operational level and has been thought unnecessary for formal operational students [3,4] In the present experiment, the use of concrete materials has been found beneficial to all the students irrespective of their Piagetian level of mental development The students at the secondary stage learnt better when they had something from the surrounding and the real world does help them in understanding the formal level concepts

Guided self study provided a chance to the students to interact with the peers for the solutions of their problems They were otherwise hesitant to discuss their problems with the teachers as openly as they did with the peers A comparative spirit was also created among the students. Many of them reported that they read chemistry in their leisure time, outside the class and at home.

Thus more attention is required to be paid towards providing concrete materials and the guided self study approach particularly where the instruction is centred around the learner

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Writing Composition in English as a Second Language : Designing a Model and a Strategy for Teaching Adult Learners

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THE ability to produce expressions freely on a given topic is not merely due to knowledge of modus significandi in a language -- specially in a second language. Composition in higher secondary level does not depend only on grammatical and linguistic competence. It requires, apart from linguistic material, extralinguistic material like attitude, aptitude, need to express, social environment, sense of appropriateness, rationale for relevance Specific bits of information are also not the sole basis for composition on a given topic In order to compose, analysis of the major concepts into sub-concepts and synthesis of those in order of verbal and written organisation is more important. Therefore, the structuralists' representational model of teaching composition through content organisation fails to help students learn how to write composition. On the contrary, the communicativists' cognitive model of teaching through concept organisation may be more helpful in making them develop and acquire the ability to compose at the higher secondary stage. Proper ordering of concepts and sub-concepts relative to a given topic in form of thought/idea units -- aroused and processed in mental operations -- seem to be the root of composing.

Grammatical and linguistic competence cannot help learners any more than the ability to produce individual sentences does Likewise, information arrangement competence -- under guided or controlled teaching -- may help them write few information laden sentences on a given topic; but these alone cannot help learners write independently on the given topic with sufficient coherence. The ability to compose depends more on one's (a) emitting mental reactions to a given topic in an operant way, (b) identifying major concepts, (c) analysing these into sub-concepts, (d) vocalising these in terms of sentences and clusters of sentences, and (e) organising and editing concepts and sub-concepts in writing. The language behaviour involved here is more socio-psychological than linguistic. The main urge is to communicate to a specific audience certain thoughts or ideas (message units) that are chosen coherently from experiential units to make the reportage cohesive.

Dimensions of a Model of Teaching

A model of teaching composition may be viewed on three dimensions-- (i) Concept Attainment, (ii) Concept Organisation, and (iii) Concept Exposition. For the target population, the nature of teaching and learning task appears most susceptible to concept organisation. For,

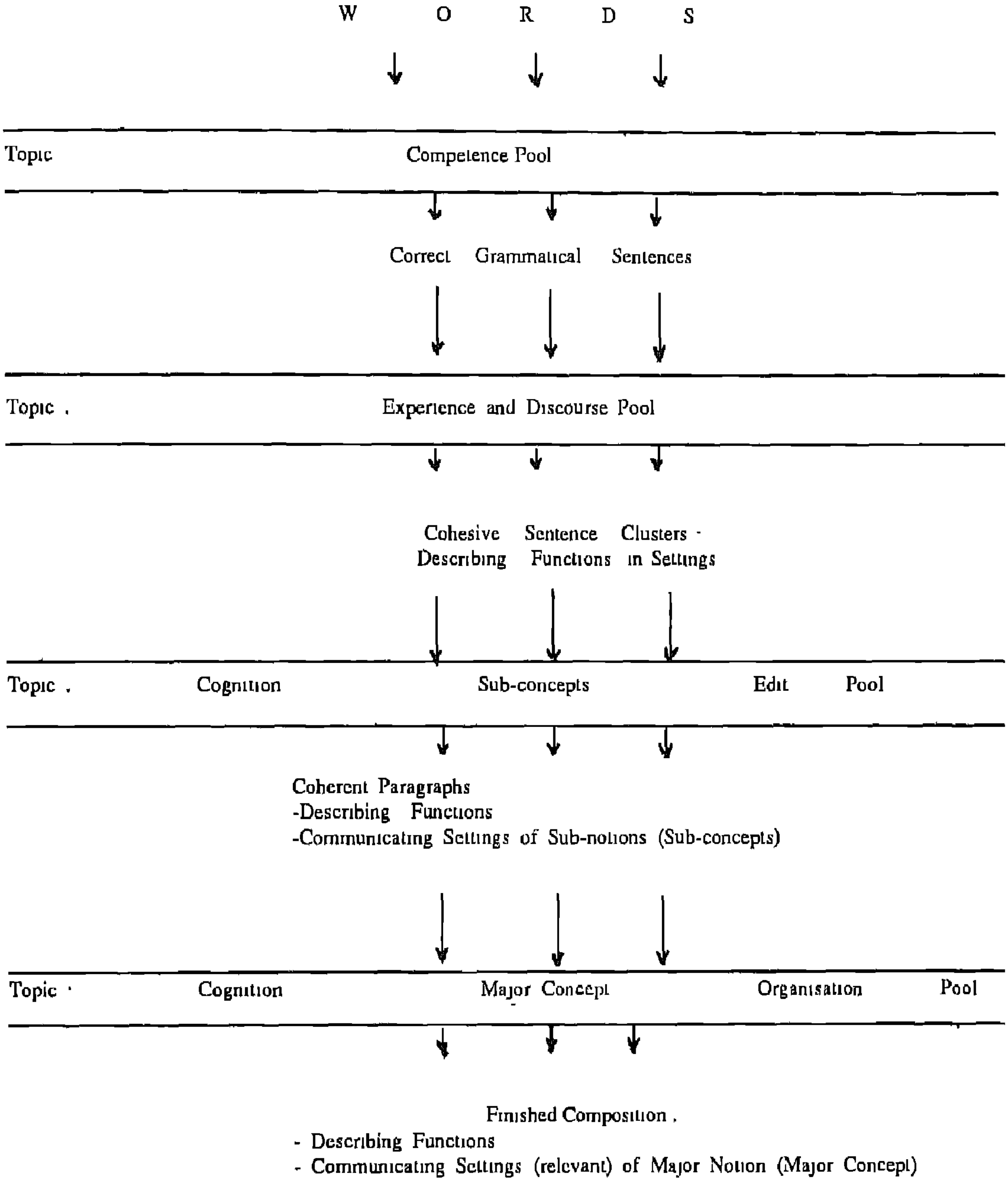

FIG. 1 **Concept Organisation Process** *(Construct Flow Chart)*

their problem does not seek to solve how concepts are attained or how concepts are exposed. Their problem must seek to solve how concepts are organised coherently--where already acquired linguistic and grammatical competence provides support as a foundation. Therefore, it follows that any model suggested or prescribed for teaching adults composition, should be a concept organisation model.

Concept organisation process may be explained in terms of three types of mobility -- Construct flow, Operation flow, and Learning flow. These are illustrated through given diagrams.

Construct Flow

Correct grammatical sentences are constructed with the help of competence. Experience, exploration and discourse interaction lay foundation for cohesive sentence clusters. Cognition of sub-concepts and concepts yields coherent paragraphs. Choice of sentences does communicative functions. Analysis of sub-concepts and concepts describes settings of communication. Editing through rationale-application replicate or realize or simulate sub-notions or major notions in form of finished composition.

Operation Flow

This calls for relationship among concept organisation, cohesive and coherent expression, and communicative experience.

Having exploited the experience data, the composition writer is helped to revive past or present percepts willfully. Thus notions and sub-notions are shaped into concepts or sub-concepts -- rather notions are restructured in organised concepts of settings or situations. Concepts -- psychologicals constructs -- are then registered in frames. The physical organisation of concepts provides contents for the composition writer.

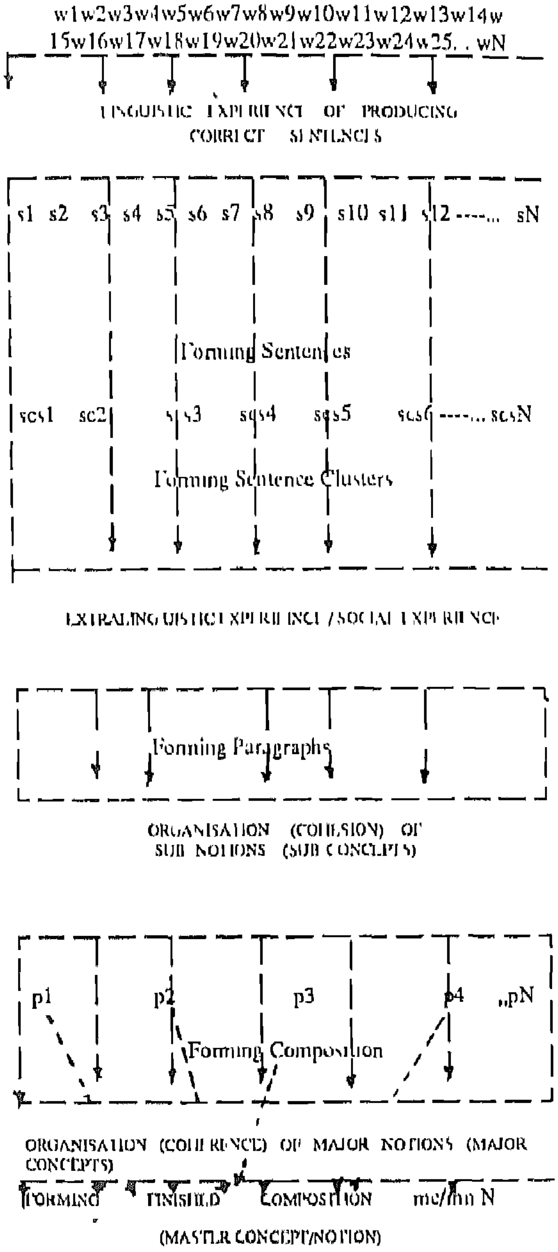
w1w2w3w4w5w6w7w8w9w10w11w12w13w14w15w16w17w18w19w20w21w22w23w24w25. . wN
LINGUISTIC EXPERIENCE OF PRODUCING CORRECT SENTENCES
s1 s2 s3 s4 s5 s6 s7 s8 s9 s10 s11 s12 ----... sN
Forming Sentences
scs1 sc2 scs3 scs4 scs5 scs6 ----... scsN
Forming Sentence Clusters
EXTRALINGUISTIC EXPERIENCE / SOCIAL EXPERIENCE
Forming Paragraphs
ORGANISATION (COHESION) OF SUB NOTIONS (SUB CONCEPTS)
p1 p2 p3 p4 ..pN
Forming Composition
ORGANISATION (COHERENCE) OF MAJOR NOTIONS (MAJOR CONCEPTS)
FORMING FINISHED COMPOSITION mc/mn N
(MASTER CONCEPT/NOTION)

FIG. 2: CONCEPT ORGANISATION PROCESS
(Operation Flow Chart)

Explanation .
w = word
s = sentence
scs = sentence or cluster of sentences
p = paragraphs
1,2,3 and so on = number/numbers (of) that may be produced

wN = words that may be produced in writing infinitely and unpredictably
sN = Sentences that may be produced in writing infinitely and unpredictably
scsN = Sentences or clusters of sentences that may be produced infinitely and unpredictably
pN = paragraphs that may be produced in writing infinitely and unpredictably
mc = major concept
mn = major notion

After concept frames are retrieved, selected, and charted, the composition writer is to fix modus operandi. The mode of expression should be cohesive in nature. Cohesiveness implies editing the charted data in terms of class and non-class properties of concepts, i e which sub-concepts are specially and coherently auxiliary or corollary to, and cognate or convergent with, which major concepts. This includes proper sequencing of major concepts and sentences and clusters of sentences. Finally communicative experience finds the media for the mode through which the contents are to be presented. It is to construct the message system--in other words, the communicative support system - first verbally and then in writing.

Learning Flow

The concept organisation process is both analytic and synthetic. The structuralists' deductive principles would not hold ground. A composition writer has to be initiated into inductive logic or reasoning The learning flow mobility finds itself in a kind of relationship where concept organisation is the content, cohesive and coherent expression is the mode, and communicative experience is the media.

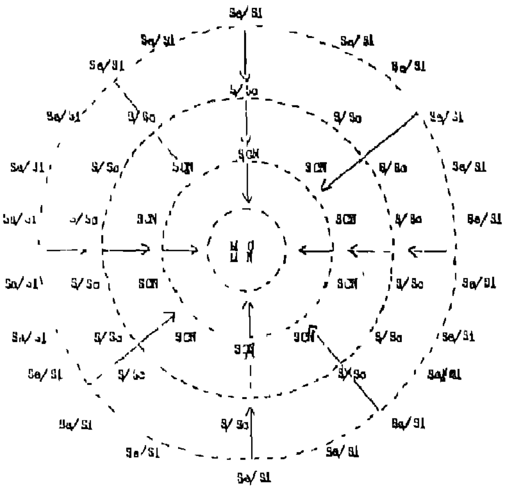

FIG 3 **Concept Organisation Process**
(Learning Flow Chart)

Explanation
Se/Si = Setting or Situation
S/Sc = Sentence or Cluster of sentences
SCN = Sub Concepts or Notions
MC MN = Major Concept or Major Notion

Phase I	- Interacting in discourses - Selecting topic - Analysing major and sub-concepts
Phase II	- Developing data chart - Identifying major notion and sub-notions - Exploring cognizance and experience - Locating settings for respective notions
Phase III	- Postulating communicative functions - Deciding upon corresponding sentence/s - Writing sentence/sentences(in cluster/s) cohesively - Writing paragraphs coherently
Phase IV	- Applying rationales and judgement for editing - Verifying data--notions, settings, functions - Completing the task

FIG. 4 **Concept Organisation Process**
(Learning Flow Chart)

Functions of a Strategy for Teaching Through Concept Organisation

Learning is a process which involves analysis and sythesis next The learning mobility is stated below.

Analysis

Students learn how to identify the major concept -- the topic deals with -- or the major notion. The notion is to be in a setting. So they locate the setting. They generalise the major communicative function required to present the setting.

Next, they break major concepts into sub-concepts (paragraph deals with) or the sub-notions By exploring cognizance and experience, these sub-notions and the relative settings are located. They judge and postulate alternatives -- function required to present settings

Synthesis

Students learn how to choose and negotiate notions and settings that reflect relevant concepts and sub-concepts. They learn how to write sentences or sentence clusters for each sub-concept.

Next, they learn how to apply the rationale for editing This implies selection, elimination, addition, alternations, and the rest They learn how to make sentences or sentence clusters cohesive, and to make paragraphs coherent.

This is how students learn how to organise concepts -- in paragraphs -- and sub-concepts -- in sentences and sentence clusters. They also learn how to verify (i) if concepts represent correct notions, (ii) if notions are enumerated in correct settings, and (iii) if these are properly communicated through sentences or sentence clusters.

The most unique approach about teaching through concept organisation is language freedom. On the one hand, the basic objective is to help students learn how to put together expressions coherently. On the other, since average students, as well as teachers, in the population, are usually uneasy with strict verbal behaviour in English, use of bilingual situation can be made profitable and viable.

Monolingual principle of direct method and structural approach is not necessarily adhered to -- rather this should be avoided or used sparingly in order to facilitate concept cognition and concept retrieval For, monolingual principle is not at all insurance for developing composition as it does not ensure necessary confidence and convenience for both learners and teachers at the specific Indian level

Steps for Teaching through Concept Organisation

Various operations are involved in teaching composition through concept organisation. These are stepped out precisely .

Step 1	Naming the topic
Step 2	Identifying major concepts
Step 3	Analysing major concepts into constituent sub-concept - Exploring sub-notions
Step 4	Prescribing -- expressing sub--concepts into coherent clusters of sentences (paragraphs)
Step 5	Editing clusters in terms of major concepts, i.e. paragraphs
Step 6	Using linking devices to connect clusters and paragraphs

Incubation / Sedimentation

Step 1	Regenerating discussion/discourse-organisation of major concepts on the bases of sub-concepts
Step 2	Further information support
Step 3	Write
Step 4	Feedback.

(N B. A strategy concerned should be commensurable to the principles of communicative approach The cognitive school of language teaching would provide pedagogic foundations.)

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Adult Education Instructor : Determinants of his Effectiveness

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THE Adult Education Programme is being organised to attain total literacy in the age-group 15-35 years. The programme lays special emphasis on the removal of disparities and equalisation of educational opportunities for those who have been denied equality so far, especially SC/ST, women and other educational backward sections. The success of the programme largely depends on the performance of the functionaries especially at the grass-root level. The instructor is the grass-root level worker and also the actual doer of adult education in the community. The instructor is directly responsible for organisation of the centre, teaching of literacy, generating awareness, helping economic development, mobilising resources, recording the process of change and learning, dissemination of functional information, organisation of recreational and cultural programmes and management of the centre. Hence, the success of the programme largely depends on how effectively an instructor discharges the roles expected of him.

Mathur and Chand (1981) reported that the instructors incharge of the adult education centres are crucial for the successful implementation of the programme. Hence, it is necessary to identify their characteristics, their educational background, the social strata they come from, the kind of training they receive for adult education and some other questions which are likely to have a bearing on their performance. Keeping the above in view, the present investigation was conducted to identify the socio-demographic and psychological variables like sex, age, caste, educational level, marital status, income, mass media exposure, achievement motivation, attitude and personality traits related to instructor effectiveness.

A review of research studies in this area clearly shows that a few attempts have been made in India to identify the effectiveness of adult education instructors in terms of qualities, characteristics, and attributes possessed by them. Further, studies indicating the factors contributing to the effectiveness of the instructors are very rare. Hence, the present study was designed with the following objectives:

1. To know how far men and women vary in their effectiveness as instructors
2. To study the influence of age, caste and level of education on the adult

education instructors' effectiveness

3. To know how far unmarried and married vary in their effectiveness as instructors.
4. To study the impact of occupation, size of land and income of instructors on their effectiveness
5. To examine the impact of mass media (newspaper, radio, television and cinema) on the instructors' effectiveness.
6. To assess the influence of urban pull on their effectiveness
7. To know the place of instructors' attitude towards adult education in their effectiveness
8. To study the influence of achievement motivation possessed by the instructors on their effectiveness.
9. To examine how personality characteristics are related to their effectiveness
10. To estimate the amount of influence exerted by various independent variables chosen on the instructors' effectiveness

Hypotheses

In the light of the above objectives, the following hypotheses were framed for testing:

1. Men and women do not differ significantly in their effectiveness as instructors.
2. Instructors representing younger age-group do not differ significantly from those representing older age-group in their effectiveness as instructors
3. There is no significant difference in the effectiveness of the instructors representing different caste groups.
4. There is no significant difference in the effectiveness of the instructors representing different levels of education.
5. Unmarried and married do not differ significantly in their effectiveness as instructors
6. There is no significant difference in the effectiveness of the instructors representing different occupations.
7. There is no significant difference in the effectiveness of the instructors possessing different land holdings.
8. There is no significant difference in the effectiveness of the instructors representing different levels of income
9. There is no significant difference in the effectiveness of the instructors representing different levels of exposure to mass media (newspaper, radio, television and cinema).
10. There is no significant difference in the effectiveness of the instructors representing different levels of urban pull.
11. There is no significant difference in the effectiveness of the instructos having different levels of positive attitude
12. There is no significant difference in the effectiveness of the instructors possessing different levels of achievement motivation
13. There is no significant difference in the effectiveness of the instructors representing different levels of scoring on each one of the 16 personality factors (as measured by Cattell's 16 PF)
14. The contribution of the socio-economic, demographic and psychological variables in predicting instructor effectiveness would not vary significantly.

Methodology

Tools

For testing the hypotheses framed it requires some tools to measure instructor-related aspects, viz effectiveness, attitude towards adult education, mass media exposure, urban pull, achievement motivation and personality characteristics The instructor effectiveness scale consisting of instruction-related and community-related tasks, the attitude scale for measuring instructors' attitude towards adult education, and an interview schedule for measuring mass media exposure and urban pull developed by the investigator were utilised. Further, Cattell's 16 Personality Factors Questionnaire Form E and Santhamani's Sentence Completion test for measuring the personality and achievement motivation possessed by the instructors, were adopted. A proforma on the socio-demographic aspects of the instructors was also developed.

Sample

The present investigation was conducted in the Rayalaseema region of Andhra Pradesh which consists of four districts,viz. Anantapur, Cuddapah, Chittoor and Kurnool. The Adult Education Programme is being implemented in all the districts. There are two adult education projects in each district. Out of the eight projects, four were selected randomly. There are 300 adult education centres under each project. Each centre is manned by an instructor. Thus the universe of the study is 1200 adult education instructors. Out of this, 240 adult education instructors were selected randomly to represent equally the two sex groups (men and women) and two age-groups (less than 20 years and more than 21 years) as the sample of the study. In order to test the hypotheses framed, it requires three more sub-samples, viz. adult learners, community representatives and adult education supervisors.

Five adult learners were selected from among the participants of the centre randomly, and five community representatives were also selected randomly from the community where the centre is organised for rating the instructor effectiveness scale Part-A and Part-B, respectively. All the 40 supervisors working in all the four projects were also involved in rating the instructors selected for the study.

Procedure

Relevant data were collected in two phases. During the first phase, the instructor-related tools, viz. personality questionnaire, achievement motivation test, mass media exposure and urban pull schedules were administered to the selected instructors. Further, for the self ratings of the instructors on their performance, the instructor effectiveness scale was also administered.

In the second phase, the investigator visited all the adult education centres organised by the selected instructors ,and administered Part-A and Part-B of the instructor effectiveness scale to the selected learners and community representatives, respectively. Further, the effectiveness scale (Part-A and B) was also administered to the supervisors with a request to rate the instructors working under their supervisor.

Data Analysis

The data thus collected from the instructors, learners, community, and supervisors were pooled and analysed. The mean effectiveness score arrived from different sources of ratings were averaged to get the cummulative mean effectiveness score of the individual instructors. The data were treated with relevant statistical techniques to study the influence of the selected variables on instructor effectiveness. Further, multiple regression analysis was also carried out to estimate the amount of influence exerted by various independent variables chosen on instructor effectiveness

Findings

Section I

The results of the influence of the socio-demographic variables on instructor effectiveness presented in Table 1 indicate that there exists a significant difference between the

TABLE 1
Mean Effectiveness Scores and SDs Obtained by the Instructors Belonging to Different Socio-economic and Demographic Groups and their Respective t/F values

S.No	Variable	Groups	N	Mean	SD	t/F
1	2	3	4	5	6	7
1	Sex	Men	120	188 06	39 02	
		Women	120	196 67	99 10	0 88*
2	Age	Younger	120	199 66	98 43	
		Elder	120	185.06	39.84	1 51*
3	Marital Status	Unmarried	110	196.58	95 58	
		Married	130	187 38	39 61	0 94*
4	Caste	OC	86	196 16	85 29	
		BC	75	199 42	91 18	1 26*
		SC/ST	79	181 53	36 98	
5	Education	Low	119	192.92	75 06	
		Middle	88	191 82	86 34	0 07*
		High	33	191 79	35 69	
6	Occupation	Coolies	121	191 00	74 79	
		Agriculture	88	190 92	84 52	0 27*
		Other Profession	31	201 79	44 15	
7	Land	Less	116	193 51	79.85	
		Moderate	43	201 05	53 33	0 40*
		More	31	180 78	35.53	
8	Income	Less	116	198.94	100 17	
		Moderate	87	184.34	40.26	0 95*
		More	37	190.62	37 36	
9	Cinema	Low	47	196 51	41.30,	
		Medium	162	192 47	86 94	0 19*
		High	31	185 56	43.54	
10	Television	Low	99	190 98	82 00	
		Medium	85	180 73	37 22	3 08**
		High	56	212 47	99.51	
11	Radio	Low	91	185 79	35.65	
		Medium	70	184.98	40.81	2.09*
		High	21	206.48	118 84	
12	Newspaper	Low	21	198 89	36.19	
		Medium	206	191 45	80 01	0 11*
		High	13	196.25	35 19	
13	Mass-media Exposure	Low	78	180 41	32 98	
		Medium	91	204 53	112.17	2 22*
		High	71	189 95	40.21*	
14	Urban Pull	Low	60	204 53	100 03	
		Medium	110	192.02	76.22	1 39*
		High	70	182 49	40 87	

** Not Significant

* Significant at 0 05 level

mean effectiveness scores obtained by the instructors belonging to low, medium and high television viewing categories The mean effectiveness scores of the three categories of the instructors show that the instructors with high viewing of television are rated as more effective instructors It may be because by watching more TV programmes the instructors might have acquainted themselves with latest information and may be popular among the learners. The low viewers are also rated as effective instructors than the medium viewers It may be perhaps due to the fact that the instructors might have concentrated more on the activities of the centre than TV viewing.

The results of the analysis also reveal that there exists no significant difference between different groups of instructors on different factors However, the trend of the mean effectiveness scores indicates that women, younger, unmarried, less educated, professional having moderate land, less income, low cinema-goers, high television viewers, high radio listeners, low newspaper readers, having medium exposure to mass media, low urban pull are found to be more effective instructors

Keeping in view the above results, hypotheses 1 to 9 and 11 to 14 are accepted and hypothesis 10 is rejected.

Section II

The influence of the psychological variables on instructor effectiveness is presented in the following paragraphs. The obtained mean effectiveness scores and the results of the 'F' test show that there exists significant difference between the mean effectiveness scores obtained by the different groups of instructors in their level of achievement motivation, on Factor-M and Factor Q_3 of the personality characteristics However, such differences are not found in case of other variables.

The trend of the mean effectiveness scores obtained by different scoring groups of instructors on the selected variables shows that

TABLE 2

Mean Effectiveness Scores and SDs Obtained by the Instructors Belonging to Different Scoring Groups on Different Psychological Variables and their Respective 'F' Values

S. No	Variable	Groups	N	Mean	SD	'F'
1	2	3	4	5	6	7
1	Achievement motivation	Low	57	183.15	43.17	
		Medium	134	187.74	89.09	3.09**
		High	49	215.71	145.22	
2	Attitude	Low	52	199.39	106.82	
		Medium	127	191.12	73.62	0.30*
		High	62	188.96	37.87	
3	Factor-A	Low	75	197.22	91.24	
		medium	97	197.06	83.04	1.22*
		High	68	180.81	30.57	
4	Factor-B	Low	87	197.09	84.14	
		Medium	74	188.55	42.18	0.28*
		Top	79	190.73	88.61	
5	Factor E	Low	87	195.13	83.81	
		Medium	65	184.13	37.35	0.53*
		Top	88	195.72	86.77	
7	Factor-F	Low	50	187.84	36.22	
		Medium	82	185.83	35.95	0.87*
		Top	108	199.42	101.81	
8	Factor-G	Low	77	189.33	91.69	
		Medium	69	193.04	33.81	0.09*
		Top	94	194.35	83.22	
9	Factor-H	Low	77	185.06	39.36	
		Medium	80	204.18	117.21	1.51*
		Top	83	187.75	40.48	
10	Factor-I	Low	48	198.10	112.51	
		Medium	119	196.79	73.85	1.12*
		Top	73	181.38	37.84	
11	Factor-L	Low	61	194.98	96.63	
		Medium	114	191.87	77.07	0.05*
		Top	65	190.78	43.72	
12	Factor-M	Low	91	177.92	38.54	
		Medium	72	189.02	38.47	4.65**
		Top	77	212.56	118.34	
13	Factor-N	Low	57	187.83	39.21	
		Medium	120	193.60	74.47	0.14*
		Top	63	193.93	98.94	
14	Factor-O	Low	79	183.11	40.85	
		Medium	72	199.34	91.27	0.96*
		Top	89	194.94	84.06	
15	Factor-Q_1	Low	69	189.54	40.85	
		Medium	109	200.18	101.81	1.25*
		Top	62	181.77	41.93	
16	Factor-Q_2	Low	80	206.48	86.30	
		Medium	111	185.95	78.55	2.14*
		Top	49	183.85	36.27	
17	Factor-Q_3	Low	63	210.88	129.98	
		Medium	111	190.90	43.39	3.34**
		Low	66	177.15	31.05	
18	Factor Q_4	Low	87	204.14	113.99	
		Medium	71	183.37	38.44	1.74*
		Top	82	187.66	37.51	

** Not significant
* Significant at 0.05 level

the instructors belonging to high scoring groups on achievement motivation and top scores on Factors I,E,F,M,N, medium scores on Factors C,H,O,Q_1 and low scores on attitude, Factors A,B,I,L,Q_2,Q_3 and Q_4 are found to be more effective than other groups of instructors. In view of the above, hypotheses 2 to 11, 13 to 16 and 18 are accepted. The hypotheses 1,12,17 related to achievement motivation, Factor M and Factor Q_3 are rejected.

Section III

The results of the regression analysis (step-wise) show that out of 32 variables, only ten, viz. Factor-M, Achievement motivation, Urban pull, Television, Factor Q_4, Factor Q_3, Cinema, Attitude, Radio and Factor Q_2 turned out to be significant predictors of instructor effectiveness. The total contribution of the significant variables turned out to be 19.71 per cent (Table 3).

TABLE 3

Significant Variables and their Respective Percentages of Contribution to Effectiveness

S No	Variable	Percentage of Contribution
1	Factor M	2.67
2	Achievement Motivation	2.76
3	Urban Pull	1.52
4	Television	1.98
5	Factor Q_4	2.44
6	Factor Q_3	2.83
7	Cinema	2.23
8	Attitude	1.18
9	Radio	1.43
10	Factor Q_2	1.04
	Total Contribution	19.71

The above table clearly indicates that only ten variables, i.e. four socio-economic demographic and six psychological variables were significantly affecting the effectiveness of the instructors. Further, the total contribution of the socio-economic and demographic and psychological variables accounted for 7.16 per cent and 12.92 per cent, respectively. It clearly demonstrates that not all the variables selected for the study were able to predict the effectiveness in toto Further, the predicting capacity of the significant variables varied from each other Hence, hypothesis 14 is accepted.

Conclusion

While selecting the instructors, people with the following backgrounds may be given preference women, less than 20 years, unmarried, backward classes, low educated, non- agriculturists and labour, middle class, and people with low attraction towards urban areas Further, the curriculum of the instructors' training may be restructured to include the items related to the promotion of desired qualities of psychological variables, namely motivation, positive attitude and personality characteristics.

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Aggression in Kindergarten Children

(An Observational Study of Some Structural Activities in Integrated Kindergartens in West Germany)

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INTEGRATION in the regular school is receiving increasing recognition as a legitimate educational option for students with disabilities Many issues surrounding the process of integration, however, require empirical verification. The mere placement of these students within a regular school context does not automatically result in increased social interaction between students with disabilities and those without (Robert etal 1991). As Gresham (1982) suggested in a recent review of the literature, little evidence supports the notion that the increased contact between the two groups of students in an integrated setting results in either more positive attitudes toward students with disabilities or social acceptance of those students by their peers without disabilities.

In early relationships with adults and siblings, children develop behaviour for dealing with other people and handling their own emotions. The young child's interactions with others can be either positive or negative At one point, children may seek closeness or be axions to help or share. A short time later, they may easily become angry and hostile Anti-social aggression has been characterized as one of the most prevalent, stable, socially transmittable, personally destructive, and clinically problematic behaviour patterns we face (Guerra and Slaby, 1990) Although the literature dealing with aggressive behaviour in children is extensive (Feshbanch, 1970), little actually concerns with and without handicapped issues and very little for the whole day in the integrated kindergartens.

In this study different forms of physical aggression and the child's level of aggression are defined as any form of behaviour directed toward the goal of harming or injuring self, another living being or objects. The main features of this study are·

1 Aggression in two kindergartens was observed and compared.
2. Three groups were observed in each kindergarten.
3. Groups were observed for body-body aggression, body-object aggression,

body-object-body aggression and destructivness

4. Observation convered all the activities of the complete day.
5. The observation o fthe group led to the identification of the most aggressive child which was further observed separately
6. Handicapped and non-handicapped children were observed in all the categories
7. The mixed group of children who stay longer, was observed
8. The above observations covered all activities, breakfast, free play, structured play, or otherwise.

Method

Two kindergartens were randomly selected from nine integrated kindergartens of the same structure and function One had three groups of 17 children, each had four caretakers and other had four similar groups All the three were observed A mixed group in each kindergarten, consisting of some children from these three groups, was also observed separately. The numerical strength of this mixed group was 35-40, depending on the parent's working hours. Both kindergartens are in the suburbs of Bremen with essentially working class to middle class. Some of them are unemployed also (total rate of unemployement in Bremen is about 17%). Thus the sample consisted of 102 children from six regular groups and 70-80 children in two mixed groups.

Procedures

The observation was done in a naturalistic manner since the entire group served as the sample and all activities of a complete day were covered. These activities included inner round circle, breakfast, free outdoor play, structured activity, free indoor play and lunch and finally the mixed group The group as whole was observed for two consecutive days, special aggressive child for next two consecutive days and aggression between handicapped and non-handicapped during the last two days

Observations were made in 15 minutes block and were recorded by time sampling method Behaviours were ticked as present in 30 sec. dura-

TABLE 1

Categories and Forms of Aggression Studied

		Categories	Time
TOWARDS SELF	1	Biting	
	2	Grabbing	
	3	Crying	
	4	Freezing	
	5	Shuting Out	
	6	Others	
OTHERS	7	Pushing	
	8	Biting	
	9	Pinching	
	10	Kicking	
	11	Beating	
	12	Others	
OBJECTS	13	Throwing	
	14	Hitting	
	15	Breaking	
	16	Snatching	
	17	Attacking	
	18	Others	
DESTRUCTIVENESS	19	Destroying	
	20	Damaging	
	21	Trying to Damage	
	22	Arm Twisting	
	23	Throwing	
	24	Others	

tion and behaviour from different categories could be scored in the same interval. The observer was equipped with a portable recorder for 30 sec. dot signals, and the recor- ding data sheets. Four categories and five types of aggressive behaviours were recorded (Table 1). A sixth column in each category was kept open for forms of behaviour which could not be codified in any of the five types.

Results and Discussion

Table 2 shows an overview of aggressions observed in two kindergartens in six groups, in five types of activities. Aggression towards self and towards other children is very common. The frequency was less for aggression towards objects and least of all for destructiveness. A feature common to both kindergartens was high frequency of freezing. In Kindergarten A children engaged themselves more in pushing, beating, fighting and throwing objects while in Kindergarten B they were mostly involved in crying, shouting and beating. Although specific explanations regarding this difference were not investigated, possible reasons may be that in the age of 3-6 years children freeze more in order to get attention of teachers and other adult caretakers. In this age they are in the process of establishing routine physical habits and authority conflicts prove to be major irritants. Social difficulties with playmates begin to assume importance during this time and become more significant than sources of aggression in the subsequent years. Table 2 also indicates the low frequency of aggression towards objects. Hitting and snatching were occasionally observed in both the Kindergartens. In destructiveness the children in Kindergarten A were destructive to the same extent as the children of Kindergarten B in trying to damage. The difference in the frequencies of aggression towards self or others, and objects reflects the fact that the punishment for latter is more severe than for the former or so it seems to the children.

TABLE 2

Comparison of Overall Aggression Between the Two Kindergartens

CATEGORY	TYPES	KINDERGARTEN A	KINDERGARTEN B
	Biting	6	-
	Grabbing	-	-
TOWARDS SELF	Crying	87	96
	Freezing	142	201
	Shutting out	5	5
	Others	19 S 10 SB	-
	Pushing	82	34
	Biting	7	1
TOWARDS OTHERS	Pinching	6	5
	Kicking	47	19
	Beating	90	52
	Others	20 S 58 F	178 S 7 F
	Throwing	49	35
	Hitting	40	29
TOWARDS OBJECTS	Breaking	2	5
	Snatching	33	22
	Attacking	16	5
	Others	-	1 PC
	Destroying	22	4
	Damaging	-	1
DESTRUCTIVENESS	Trying to Demage	16	22
	Arm twisting	3	1
	Throwing	10	6
	Others		-
TOTAL		770	729

S=shouting, F=fighting, SB=selfbeating
PC- pulling clothes

In different settings it is observed (Table 3) that in both of the Kindergartens the kids are the least aggressive during structured activities. In Kindergarten A the children were most aggressive during outdoor free play and breakfast while in Kindergarten B it was during indoor free play and lunch. During breakfast and lunch the children are expected to perform certain social duties like setting tables, maintaining some discipline like not cross talking, waiting till all have finished eating. Eating time varies with children of different age and is usally longer for handicapped children which the children do not like. Sometimes they do not like their breakfast or it is taken away as a punishment. This leads to irritability and expression of aggression.

TABLE 3

Aggression During Various Activities

ACTIVITY	KINDERGARTEN A	KINDERGARTEN B
BREAKFAST	161	131
FREE OUTDOOR	232	143
STRUCTURED ACTIVITY	48	81
FREE INDOOR	149	161
LUNCH	109	188
TOTAL	699	704

Kindergarten A has less outdoor space and not much outdoor recreations like swings, slides, sea-saw, etc. There the children play more with each other than with things and hence more struggle and differences, interferences and therefore aggression. Kindergarten B, on the other hand, has a good large outdoor facility and hence less aggression during this activity. During structured activity in both Kindergartens we observed less aggressiveness.

The structure of inner round circle in the two Kindergartens was somewhat different. In Kindergarten A the children of all the three groups were involved at a common place whereas in Kindergarten B this was done separately in groups. In both Kindergartens the children showed aggression during this activity by freezing. The beating and pushing was also seen.

TABLE 4

Mixed Group Aggression

CATEGORY	TYPES	KINDERGARTEN A	KINDERGARTEN B
TOWARDS SELF	Biting	4	-
	Grabbing	-	-
	Crying	36	46
	Freezing	15	46
	Shutting Out	-	9
	Others	-	-
TOWARDS OTHERS	Pushing	43	16
	Biting	-	1
	Pinching	7	1
	Kicking	12	8
	Beating	32	19
	Others	67F 12PC	52S 5F
TOWARDS OBJECTS	Throwing	21	25
	Hitting	6	7
	Breaking	3	
	Snatching	29	-
	Attacking	4	-
	Others	1	-
DESTRUCTIVENESS	Destroying	1	-
	Damaging	-	1
	Trying to demage	-	1
	Arm Twisting	1	-
	Throwing	6	-
	Others		
TOTAL		300	244

S=shouting, F=fighting, PC=pulling clothes

Table 4 presents the aggression pattern of the mixed groups of Kindergarten A and Kindergarten B. This group consists of those children from these three groups whose parents have had long working hours. Kindergarten A children fought, pushed, beat and cried during this period. (The terms aggression and fighting often appear to be used as synonyms: Hartup, 1983: Scott, 1975) At a minimum, there appears to be a widespread assumption that the rate of physica aggression and the rate of fighting should be significantly related to one another (Coie an Kupersmidt, 1983: Olwens, 1977). Kindergarten B children, on the other, shouted at each other quite a lot. In addition, freezing and crying were also seen. The total amount of aggression seen in this group is more than during any other time. The reason seems to be, for example, that kids are unknown to each other, they are all confined to one room (in Kindergarten A), with only two caretakers, they are physically tired and the activities are unstructured.

There was also the occurrence of aggressive behaviour group-wise in the two Kindergartens. In Kindergarten A the order of decreasing aggression was "Hühner", "Katzen" and "Kaninchen" group. The kids either threw objects or just froze while in "Katzen" group the children indulged in all the observed aggressive behaviour with similar frequency. The score for the most aggressive child went to "Katzen" group, followed by "Kaninchen" and "Hühner". However and fortunately, no aggression was observed between handicapped and non-handicapped children, "Kaninchen" showed a minor hint of such behaviour.

Possible explanation of the above observations is as follows: In "Hühner" group the caretakers had very poor inter-personal relationship with many different and frequent conflicts. This is perhaps reflected in the form of aggression in the children of this group. The "Katzen" group aggressive child was under psychological treatment for his aggression during the period of this observation. The structure designed for him isolated him from the group and was unacceptable to him. It appeared that his aggression was more because of the very structure which was intended to reduce it.

The "Katzen" group of Kindergarten B was top scorer in aggression, followed by "Schmetterling" and "Marienkafer". In all the three groups shouting and freezing were common. In "Katzen" group crying, throwing objects and hitting were most prevalent whereas crying and beating for "Schmetterling". Special aggressive kid of "Katzen" group was the most aggressive among the three groups. The aggressive child of "Katzen" group was destructive whereas the same behaviour was not seen in other two groups. Aggression between handicapped and non-handicapped children was very little but present to a similar extent in all the three groups.

The "Katzen" group teacher was rather cold in his approach to children. The coldness was seen not only to frustrate the children but also failed to elicit loving reaction from them. These are the ingredients that lead to hyperaggressiveness in this group.

The success of integrated Kindergartens is indicated by the very low incidence of aggression between handicapped and non-handicapped kids. The envisaged functions of the special teachers, therapists and caretakers is not only to substitute the handicaps of the children but to motivate communication and cooperation among the whole group. It is achieved by giving as much help as necessary although as less as possible. This is an important element of integrated Kindergartens

In the groups it was observed that normal children were also very helpful to these handicapped kids. They succeeded in special structures designed for them by the teacher. This helps in their normal development process.

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Mental Health of Higher Secondary Students in Relation to Socio-economic Status

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STUDENTS are closely related with society since their birth. The social and economic structure of society definitely influences the mental health of students. Henery (1923) states that socio-economic status affects the physical and mental growth of students Children of the families belonging to high social status possess more developed mind and health. Terman and Merrill (1937) have found that children of the parents who possess high status in society have more developed intelligence and high education than children of low group society Narayanan and Ganesan (1977) have found that poor socio-economic conditions lead to authoritarian child-rearing practices. Shanmugam (1957) and Rath (1974) have shown that low socio-economic status is associated with abnormality. Rao and Parthasarathy (1986) have found that children coming from poor socio-economic status presented problems like looking miserable, unhappy or avoiding others company.

The present study was designed to study the mental health of higher secondary students in relation to SES This study had the following objectives :

1. To find out the effect of socio-economic status on mental health.
2. To find out the effect of sex difference on mental health, when socio-economic status is controlled.
3. To compare the mental health of urban and rural students, when socio-economic status is controlled.
4. To compare the mental health of science and arts students, when socio-economic status is controlled.
5. To compare the mental health of students across grade levels, when socio-economic status is controlled.

Method

Subjects

The 501 subjects in this study were the students of Classes IX-XII (ages 13-19) enrolled in two urban and two rural higher secondary schools of Azamgarh district, Uttar Pradesh, India. Out of these 501 students, 251 were boys and 250 were girls

Instruments

In the present study, the following tools were used for the collection of data ·

1. Mental Health Scale (MHS) : This scale was developed and standardized be Anand (1985). The scale was constructed on the five-point Likert's technique. It consists of sixty statements. Twenty are positive and 40, negative The scale is based on six characteristics - self-concept, concept of life, perception of others, perception by others, adjustment and achievement. The test-retest and split-half reliabilities of the scale are + 0.88 and + 0.79, respectively.
2. Socio-economic Status Index (SESI) : Socio-economic status was measured by SESI prepared by Bhattacharya and Rai (1984). It consists of 32 items based on the areas of family background, occupation, home and home materials, means of communication and automatic vehicles, etc. The test-retest reliability of the Index, as reported by the authors, was 0.74.

Results

ANOVA was used to determine the effect of SES on mental health Means and SDs of high, average and low SES are shown in Table 1. A summary of ANOVA for these three groups of SES on mental health is presented in Table 2. This table shows that the mental health of high average and low SES of students differs significantly at 0.01 level The correlation between MH and SES was 0.28 (significant at 0.01 level). This result indicates that SES affects the mental health of students So, in order to find out the effect of sex difference on mental health it was considered necessary to control the effect of SES.

One-way ANCOVA was used to determine the effect of sex difference on mental health Table 4 shows that the value of F (5.15) is significant at 0.01 level Table 3 indicates that the mean of female students on mental health is greater than male students. Hence female students are more healthier than male students, when SES is controlled.

Table 5 for mental health of urban and rural students indicates insignificant F (0.21) This means that urban and rural students do not significantly differ on mental health, when SES is controlled.

TABLE 1

Means and Standard Deviations of High, Average and Low SES Students on Mental Health

SES	N	Mental Health		
		Sum	Mean	SD
Low (23 to 40)	164	22782	138.91	19.48
Average (41 to 59)	272	39911	146.73	20.08
High (60 + .)	65	10400	160.00	24.55
Total	501	73093	145.89	

TABLE 2

ANOVA for Effectiveness of High, Average and Low SES on Mental Health

Source of Variation	df	Sum of Squares	Mean Sum of Square	F	P
Among Group	2	21112.79	10556.40	22.56	<0.01
Within Group	498	233054.60	467.98		

TABLE 3

Means and Sums of Students on Mental Health and SES

Groups	N	Criterion (MH) ΣY	$\bar{Y}$	Control (SES) ΣX	$\bar{X}$
Male	251	35939	143.18	11374	45.31
Female	250	37154	148.62	11824	47.29
Urban	251	37500	149.40	13067	52.06
Rural	250-	35593	142.37	10131	40.52
Science	241	36300	150.62	11359	47.13
Arts	260	36793	141.51	11839	45.53
Class IX (13.78)*	120	16072	133.93	5462	45.52
Class X (14.41)*	120	17073	142.28	5493	45.78
Class XI (16.10)*	131	19970	152.44	6350	48.47
Class XII (17.20)*	130	19978	153.68	5893	45.33

*Indicate Mean Age.

TABLE 4

One-way ANCOVA for Sex Difference on Mental Health

Source of Variation	df	Sum of Squares	Mean Sum of Squares	F	P
Between Sex	1	2396.89	2396.89	5.15	<0.01
Within Sex	498	231655.049	465.172		

TABLE 5

ANCOVA for Mental Health of Urban and Rural Students

Source of Variation	df	Sum of Squares	Mean Sum of Squares	F	P
Between	1	100.14	100.4	0.21	>0.05
Within	498	233952.24	469.784		

TABLE 6

ANCOVA for Mental Health of Science and Arts Students

Source of Variation	df	Sum of Squares	Mean Sum of Squares	F	P
Between	1	8541.33	8541.33	18.86	<0.01
Within	498	225511.05	452.83		

TABLE 7

ANCOVA for Grade Difference on Mental Health

Source of Variation	df	Sum of Squares	Mean Sum of Squares	F	P
Between	3	30103.07	10034.357	24.403	<0.01
Within	496	203919.31	411.188		

A significant difference was observed between science and arts students on mental health as evident from Table 6. The table shows that the mental health of science and arts students differs at 0.01 level of significance, when SES is controlled. Table 3 indicates that the mean of science students on mental health is greater than that of arts students. Therefore, science students are mentally healthier than arts students.

The results related to the grade difference on mental health are shown in Table 7. This table indicates that the mental health of students of different grades differs significantly at 0.01 level (F=24.403). Table 3 shows that the means of mental health increase with increasing grade. Therefore, the mental health of higher class students is higher than lower class students.

Discussion

Table 2 shows that the mental health of higher secondary students affected by SES was expected, because the socio-economic status of family does not go with the chance of getting education only, but it is also found to be related to the level of one's mental health, as higher socio-economic status means better educational, motivational and more intellectual simulations. It is supposed to influence a student's attitude, interests, values, motivations, etc. and, thereby, his mental health. Therefore, children of the families belonging to higher socio-economic status possess more developed mind and health than the average and low socio-economic status students. This result is supported by previous research of Rao and Parthasarathy (1986)

The result of ANCOVA (Table 4) shows that female students are more mentally healthier than male students. The previous researches revealed contradictory results. Rai (1985) found that no sex difference exists on mental health, whereas Dohrenwend, et al (1980), Harlo and Harlo (1965), Hotaling (1984), Eussell and Sarasan (1965) and Weiss (1987) reported that women are more likely to score lower than men on mental health because their experience of symptoms of demoralization differs.

ANCOVA Table 5 shows that the mental health of urban and rural students does not differ significantly, when socio-economic status is controlled, whereas 't' (3.53 at 399 df) is significant at 0 01 level This result indicates that both the students of rural and urban areas are adjusted and adapted to their respective environment in the same way, when socio-economic status is controlled This result was expected by researchers because social and economical factors play an important role in the development of students' mental health Students coming from the families of lower socio-economic status suffer from adjustment problems and inferiority complexes

Table 6 shows that science students are mentally healthier than arts students when SES is controlled This result was also expected by researchers because it is a hard fact in the present Indian context that students of science are more positive than students of arts People believe that only intelligent students offer science as a subject of study. Due to this status in Indian society, generally intelligent students are admitted to science courses at the secondary level. On the other hand, those students who fail to get themselves admitted in the science stream think that science is too difficult to pursue and seek admission in art courses Perhaps due to this reason higher intelligent and higher achievers are selected for science courses and average and below average students get admission in the art and commerce courses Whereas all the previous researches (Anand, 1984; 1985; Rai 1985) revealed that students who get admission on the basis of intelligence achievement and interview are more mentally healthier than those who are admitted on the basis of academic career only Rai (1985) found the students of technology and medical courses are more mentally healthier than those of art and social sciences. These researches also support the findings of the present study.

Table 7 shows that the mental health of students of higher secondary increases with grade. This result is very interesting and logical. Students in the higher secondary age (13-19) are very sensitive and they grow quickly. At this stage students are free from psychological stress. Therefore, the mental health of students increase with their growth. The age factors in the study of mental health have been generally neglected in most comprehensive volumes (Albee, 1959; Ewalt, 1961, Gurin et al, 1960, Mclean et al , 1958, Ridenour, 1961). Meltzer and Ludwing (1971) found that mental health increases from the 20-29 age-group to 30-39 age-group and the significant drop starts in the last three age-groups (40-49, 50-59, 60-69). But the last three age-groups do not differ significantlly from each other. This result also supports the present study.

Conclusion

The present study reveals that the mental health of low socio-economic status students is lower than that of the students of higher socio-economic status

Female students are mentally healthier than male students, when SES is controlled

Urban and rural students do not differ significantly on mental health, when SES is controlled.

Science students are mentally healthier than arts students, when SES is controlled. Mental health increases with grade (age also)

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Book Review

Population Education : A National Source Book (Volume I)
Editors : C. Seshadri and J.L. Pandey
National Council of Educational Research and Training,
New Delhi, 1991, pp.xiii +404

THE measures to check population explosion in India have not been so successful so far Only instaneous measures are being adopted to control population growth There is a need to make a long-term policy through which population growth can be controlled permanently. Demographers think that only instaneous contraceptive measures can be adopted for existing productive fertile couples. There is a need to provide population education to the future generation so that along with population control and better quality of life society could get healthy socio-economic development.

Population education is now in its childhood stage. So there is a lack of material on the theory, method and subject matter of population education. Whatever is available is unkempt in various reference books In the book under review an attempt has been made to accumulate the various aspects of population education : its concept, theory, method, socio-economic development, environment, health and nutrition and biological, familial and educational aspects of population.

The book under review is divided into seven sections with a total of eleven chapters The first section highlights the origin and development of population education and its recognition as a discipline The first chapter of this section deals with the concept, theory, method and development of population education in general In the second chapter development of population education in India has been discussed along with the progress of the National Population Education Programme (NPEP) and Population Education with reference to the New Education Policy, 1986

The first attempt to develop population education was made by Alva Myrdal in her book 'Nation and Family' in 1941 in the USA In India population education was developed in 1980 in the form of NPEP by the Central Education Ministry with the financial aid of UNFPA and technical assistance of UNESCO. At present this programme is being conducted by the National Council of Educational Research and Training all over the country

Population education tries to understand the concepts, theories and methods of demography along with the actual situation of population. It gives a rationale and scientific approach to understand the causes and consequences of population growth and aspects like health, disease, sex education, environment, socio-economic development, status of women poverty and quality of life. But the most important aspect of population education is to bring about change in the behaviour and attitude of school children towards population situation so that population explosion and its related problems can be checked to get sustainable socio-economic development and better quality of life.

The NCERT is trying to include population education in different subjects and language books through interdisciplinary approach. While doing this the mental level, age and ability of school children have been kept in view. The message of population education is being incorporated in Environmental Science, Home Science, Geography, Civics, Political Science, Economics and Sociology

The second section deals with the analysis of population situation in the world, India and different States/Union Territories of India. Both the chapters of the third section deal with the interrelationship of population and development The first chapter is based on the different aspects of population growth and socio-economic development in post-independent India. Though the rate of socio-economic development has increased after independence, yet it is not sufficient to fulfil the needs of the increasing population. Still we are facing the problems of food, housing, drinking water and fuel. There is remarkable progress in education but about half the total population is still illiterate. Those who are educated, are facing the acute unemployment problem due to population explosion. There is a need to control population explosion in order to make positive relationship between population and development. The second chapter discusses the status of women, their development, diet, health, fertility, working conditions, maternity and child rearing in relation to population situation.

The fourth section is on population growth and its negative effect on environment and resources. Environment and resources have been destroyed due to the explosion of population. Deforestation, soil erosion, flood and extinction of wild animals are the question marks on development. Acid rain, depletion of the Ozone layer and pollution of water and air increase due to the use of chemical material. Conservation of environment and resources is necessary for development which could be possible only when population explosion could be controlled.

Health and nutrition is another theme covered in the fifth section. The first chapter of this section reflects the present health situation, policies and programmes of health services in India The second chapter deals with population and nutrition. It elaborates the factors responsible for economic status of family, beliefs and taboos related with food and lack of proper guidance in the matter of diet for the child. Infant mortality, etc. depends more or less upon food intake. Anaemia, night blindness, goitre and other related diseases take place due to lack of proper diet. The chapter also gives information about the National Nutrition Programmes.

Family life education is another important aspect which forms the subject of the sixth section. The first chapter of this section explains the problems of young people, physical and emotional change during pre-adolescence age and orientation towards opposite sex during this age. The second chapter deals with the method of family planning, biological structure of human reproductive system and sexually transmitted diseases like gonorrhea, syphilis, AIDS, etc.

The theme of the relationship between

population and education is covered in the last section Education is directly related with the quality of life. There is need for population education for educational development and better quality of life.

At the end of these chapters there are five important appendices on various aspects of population education The first appendix contains important demographic glossary. Comparative statistical data on various aspects of population and development of India and States/Union Territories are covered in the second appendix. The third appendix deals with the information about environment and ecological importance of Ozone layer. The fourth appendix highlights some important research findings on population and nutrition. The last appendix is on the development of the body clock of both males and females. This appendix provides important information to the readers on healthy physical and social development.

Basically written for teacher educators, teachers, researchers and textbook writers, this book will be useful to all those who are engaged in such areas as education, health, family welfare and socio-economic development.

NARESH SINGH PUNDEER

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TO OUR CONTRIBUTORS

JIE invites articles/papers on the impact of educational research on classroom practices and policy decisions. Specific examples where this impact is apparent may be given.

GENERAL EDITOR

Language Awareness : A Conceptual Framework For Developing Language Curriculum

(Dr) N Sukumar Gowda
Director, Centre for Studies in Education, Puttur (DK)

Language awareness is a multidimensional concept It includes a number of mutually related abilities, skills and dispositions This phenomenon of language awareness, in the opinion of the author, consists of metalinguistic awareness, communicative competence and aesthetic experience Any language curriculum in schools, therefore, should help students develop language awareness in all its three dimensions

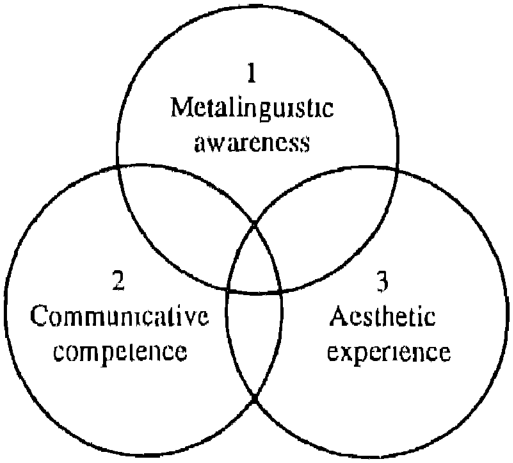
Learning or knowing a language involves two distinct types of knowledge, i.e. knowledge *about* language or metalinguistic competence and knowledge *of* language or language experience, and that the former knowledge, in order to be relevant and meaningful to the learner, must emerge from the learner's knowledge *of* language (Gowda, 1986).

The central thesis of this paper is that child's success in language depends not only on his or her metalinguistic knowledge, but also on the development of other aspects of language awareness, since these aspects are so integrally related to child's whole cognitive and personality development In this paper an attempt has been made to elaborate the notion of 'knowledge *about* language' and 'knowledge *of* language' by further classifying the phenomenon of language awareness into three distinct dimensions and viewing these three dimensions in terms of typology of knowing, namely, *metalinguistic*, *communicative* and *aesthetic* knowledge. The paper also includes implications for language curriculum

The Notion of Language Awareness

Many writers (e.g., Cazden, 1974; Mattingly, 1984; Ryan, 1980) have described the phenomenon of language awareness by such terms as 'linguistic competence', 'linguistic or epilinguistic knowledge', 'metalanguage', 'metalinguistic ability', 'access', and 'metacognition'. According to these writers language awareness is synonymous with metalinguistic awareness, i.e an ability to focus attention upon the form of language in and of itself, analyze and describe it. Other aspects of language awareness, which will be discussed in this paper were ignored or deemed unimportant by those who held that the child's language behaviour is incumbent on what the child knows about the form and functions of that language (e.g., Lundberg, 1978; Mattingly, 1972). Metalinguistic awareness, as I see it, is only one dimension of language awareness, and that there are other aspects of language awareness which too are essential for child's success in speaking, reading and writing. Under the ruberic of general cognitive structure, language awareness can be viewed as a multidimensional phenomenon of mutually related abilities, skills and dispositions.

Viewed in terms of the typology of knowing, the concept of language awareness is better apprehensible in its original triple facets of knowing *that*, knowing *how*, and knowing *it* (Ryle, 1949; Rozeboom, 1972). Thus, the phenomenon of language awareness includes not only analytical knowledge (or knowing *that*, often called in contemporary literature as 'metalinguistic awareness'), but also other dimension, such as pragmatic knowledge (or knowing *how*, which involves an awareness of communicative skills and strategies), and aesthetic experience (or knowing *it*, i.e the artistic aspect of language).



1 *Metalinguistic Awareness or Analytical Knowledge of Language.* We learn about objects, people, and events as objects of our perception and cognition—as something that is described by others or to be described to others. In Ryle's (1949) terms this objective and analytical knowledge is characterized as 'Knowing *That*'. An awareness of "the form of language in and of itself" typifies this type of knowing, since sometimes we use language as direct object of our cognition for various reasons (see Clark, 1978) In this type of knowing, what the knower is interested in is the linguistic form or structure of sentences Whether a sentence is anamolous, ambiguous or grammatical is purely a linguistic concern For example, an ability to distinguish between "John is easy to please" and "John is eager to please" is precisely metalinguistic awareness or competence. Similarly, acts of syllabification, phoneme segmentation, phrase/sentence structure segmentation, error detection, and judgment of grammaticality and sentence acceptability form the part of one's metalinguistic competence

2. *Communicative Competence or Pragmatic Knowledge of Language:* We also learn about

objects, people and events, and language in particular, by engaging ourselves in the very act of using language (orally/written) in real situations for real purposes, by communicating with the other members of our speech community. Children, especially, learn language by exploring the possibilities of its uses and by experimenting with it in social situations And in the process of social interaction children develop rules for the use of different language forms in different situations and an awareness of different acts of speech (see Hymes, 1971; Searle, 1972) Adding a new dimension to Chomsky's concept of 'linguistic competence' or "the speaker-hearer's knowledge of his language", Dell Hymes develops the concept of "communicative competence" He sees that Chomsky's theory is inadequate for it fails to take account of real person in a social setting, that means it neglects socio-cultural factors If the linguistic *form* of an utterance dictates *meaning* in the former type of knowing, in this type of knowing the knower is concerned with how *meaning* is realized through the *form* (Halliday, 1975). The knowledge of language that we acquire from a communicative situation is mainly pragmatic, in that the language user employs his knowledge of the social context and directs his utterances according to the demands of the situation. If the former type of knowing is objective and probably mediated, this is subjective and immediate, subject to one's goals and purposes, understanding and beliefs. In Ryle's terms, this type of knowing is characterized as 'knowing *How*', i.e knowing how to use language as an instrument of communication and learning how to mean. For example, for a child learning a language means learning to find its possible uses (cf. Halliday, 1975) Halliday's notion about language use is that children develop language proficiency only through an awareness that language can serve specific functions

3. *Aesthetic Experience* Another approach to knowledge is by personally experiencing the objects and events directly or vicariously. If pragmatic knowledge is acquired by exploring various uses of language and experimenting with language devices, experiential knowing brings to bear upon the task the sum of a person's knowledge, feelings, emotions and beliefs.

Aesthetic experience includes an individual's ability in and disposition towards creating and re-creating experiences using language as a medium of art, a symbol of experience. It is a sum of artistic and aesthetic experience of an individual. This type of knowing, which is subjective, can be characterized as 'Knowing *It*' (Rozeboom, 1972), i e., knowing what the object of awareness does to me, what it arouses in me, feeling what experiences it brings to me and responding to those experiences (cf. Macleish 1956, Rosenblatt, 1980).

Aesthetic experience includes not only experiencing or sharing artist's (poet's) experiences, i.e, knowing *it*, but also, as I see it, by responding to the way artist's experiences are expressed, i.e knowing *with*. Aesthetic experience refers to a context in which the reader experiences not only the experiences that the author/poet expresses, but also with the way it is expressed. Such an awareness is holistic because word or expression is often inseparable from the idea it represents. Since such an experience is personal it resists translation or summarization

Curricular Implications

In all these analyses, knowing *that*, knowing *how*, and knowing *it* (+ *with*) are not seen as mutually separate and separable compoents, rather as integral aspects of this complex web-like, yet seemingly natural process of language awareness. Communicative competence becomes metalinguistic competence or sheer 'knowing *that*' if such exercises as pattern practice and drills, sentence repetitions and sentence corrections, and practice in sound blending and spelling rules are not anchored in learners' communicative needs. For example, books such as "How to Write Effectively" that talk about writing, though a practical guide, fall under the category of 'knowing *that*'. Similarly, appreciating an overall effect of a poem is one thing (knowing *it + with*), and attempting to write a poem in a similar genre is another (which includes experiential knowledge and practical knowledge; and 'explication du texte' — analyzing the metre and prosody of that poem involves primarily 'knowing *that*'.

Metalinguistic awareness (or an ability to reflect on the form and devices of language) can better be achieved only if learners are led to understand and believe that how different forms of language are and can be used to achieve different levels of effects, how 'form' represents 'meaning', how an idea can be expressed differently, and also develop an awareness of style and register variation, sense of audience, appropriate diction, etc.

The other aspect of language awareness that I need to emphasize in school learning situation is experiential knowledge of language or aesthetic knowledge of language. Personal expressive form of writing, poetic writing, and creative writing are the types of language experiences that come under this category Poetic writing is both an 'art' and a 'craft', that has its own form and function different from expository or transactional writing (Britton et al., 1975). Writing, especially a self motivated writing task, provides an experience of discovering what to say and to say it in a way that is intelligible to the reader including the writer himself. Journal writing as well as other expressive writing clearly fall under this category

Communicative competence develops as an individual learns to use language in real situations (natural/induced) rather than in simulated situations such as language laboratories and drill techniques. This involves knowledge of using real language for real audience and for real purposes with an object of its effect. Therefore, to have knowledge is primarily to have the power to give a successful performance. In this sense, knowing language means primarily knowing how to *use* language, and secondarily, how to *analyze* and *describe* language, and how to *enjoy* the beauty in certain language expressions Thus, in its final analysis, pragmatic knowledge or communicative competence forms the warp and woof of analytical knowledge and aesthetic experience in that knowing *that* is essentially knowing *how* to analyze language and describe it; and knowing *it* means knowing *how* to experience and appreciate the artistic aspect of language.

Translated into learning language and learning through language, school's primary function can be seen as one of enabling the students to develop language awareness in all its three dimensions, of course, with the students' communicative aspect of language serving as the base. To this end, if teachers come to realize that there are more than one dimension of language awareness, and provide amply opportunities for learners to develop language awareness in all these different, yet interrelated modes of awareness, learners' optimal language growth and cognitive growth are likely to take place Viewed this way, any theory of language development must be inadequate if one of these aspects is overemphasized at the expense of the other, or isolated from the other.

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Classroom Organisation and Management for Integrating the Visually Impaired : A Model

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The nation's total commitment towards providing equal educational opportunity to all children, makes it imperative to integrate the handicapped into the general school system. Successful integration implies the need for qualitative refocusing, restructuring and development of general educational services for children with special needs. Acknowledging the importance of the above issue, this article focuses on the development of a suitable model of classroom organisation and management for integrating the visually impaired into ordinary classrooms at the primary level of education.

INDIA's constitutional and successive policy commitments to achieving the goal of 'education for all' have resulted in a visible movement towards integrated education for the disabled, as laid out in the National Policy Education (NPE) 1986. This was strongly reiterated by the NPERC 1990 and POA 1992. These policy resolutions have introduced enormous challenges at the implementation level, for both educationists and practitioners.

The nation's commitment to integrated education implies the need for qualitative refocusing, restructuring and development of general educational services in order to cater efficiently to the varied needs of the disabled, within ordinary classroom settings.

Traditionally, educationists have looked for causes of special educational needs in the child, but of late it is being realised that school organisation and classroom management have an equally crucial role to play in causing or eliminating problems There has been a visible shift of emphasis from the medical to an environmental model of special education

With integrated education as the goal, the environmental model assumes even greater significance. This is so, as general class teachers in ordinary schools have to take on the major responsibility of teaching children with various kinds of disabilities having mixed abilities, without neglecting the main body of students in the class Teachers have to find solutions to problems within the mainstream classroom, and it is in this context that effective classroom organisation and management becomes a central point of concern and interest.

Acknowledging the important role of classroom organisation and management in achieving integration, this article focuses on the development of a model for integrating the visually impaired into ordinary classrooms at the primary level of education

Practically all the ideas and suggestions incorporated in the model by the writer, are based on participatory and non-participatory classroom observation, within special and integrated school settings in India and the United Kingdom These observations are supported by relevant researches wherever applicable

Classroom Organisation and Management

Successful classroom organisation and management is a beneficial two-way process for both the teacher and the visually impaired child. On the one hand, it creates a stable and conducive learning climate, whereby the teacher's capacity to implement the curriculum is greatly enhanced On the other, it helps the visually impaired child to relate to and use the surroudings better, thereby reducing the stress, conflict and problems arising in the child due to the impairment.

A necessary prerequisite to effective classroom organisation and management, is the need for a detailed, accurate assessment of the degree and type of visual impairment of each child with special needs in the class (Jamieson et. al. 1977, Hodgson et al 1984, Tobin, Chapman et al. 1978)

The assessment can be done in terms of

- — factors relating to the child's previous history
- — medical diagnosis and prognosis at home and school
- — functional levels of vision
- — potential learning difficulties or associated problems
- — present level of skills and potentialities in different areas of work and play
- — defining the curriculum needs of the child
- — need for special equipment and what kind
- — inclusion of a plus curriculum in areas such as mobility, communication and/or daily living skills.

This kind of a detailed assessment forms the basis of planning classroom organisation and management, by the teacher with reference to five major areas

- — physical environment
- — equipment and materials
- — time-tabling
- — class control
- — room management techniques

Physical Environment

Major alterations in the physical environment of the classroom are not that essential as would be imagined for the visually impaired child, as he or she must learn to be competent in personal mobility and orientation, as well as get ready to face the real world outside. In the case of those who are totally blind, an orderly or predictable classroom environment can help the pupil when he is initially trying to gain confidence in being independent and acquiring purposeful movement

The class teacher should be aware of the child's level of indoor and outdoor mobility, gradually developing and improving on it in the class. Development of orientation and mobility should be emphasized in every situation of any class activity

It can be helpful to let the child explore the classroom with either the teacher or a sighted peer acting as a guide, in order that he familiarizes himself with the general lay-out. It is desirable that the teacher knows various techniques of mobility, i.e going through doors, going up and down the stairs, so that he can train a peer to help the visually impaired pupil, especially in the beginning.

While familiarizing the visually impaired child with the classroom environment, a balance needs to be struck between the teacher being over-protective or showing insufficient care for the pupil's safety. This will depend on the child's visual loss and level of mobility.

Certain basic points can, however, be adhered to while planning the layout of the classroom.

(i) Improving the quality of lighting and illumination, is one of the most effective ways of increasing the effective use of remaining vision. At times however a glare must be avoided as in the case of some low vision pupils. Associated with this factor is the problem of open spaces as this causes difficulties for partially sighted pupils Lighting can be of two types — (a) environmental — needed for mobility (b) task— needed for reading and close work. The deluxe warm white is considered to be more appropriate for people who are visually handicapped than lighting which is blue-white. For desk lighting an individual lamp with fluorescent tube is most helptul

(ii) Use of colour contrast can be made to distinguish doors, windows, stairs, etc. They can be painted dark against a light background of the walls.

(iii) Low-level objects, wires, ropes, loose mats should be avoided as they can all be dangerous to the visually impaired child. All equipment should be stored properly in cupboards and not left around

(iv) A play and study corner can be arranged for the child initially, this will develop the child's confidence in moving around

(v) Clear large graphics and visual displays should be placed at eye level.

(vi) Notices should be in clear large sized print. The principle of contrast can be used here as well, to attract attention and be visually stimulating.

(vii) Material that is put up should have both visual and tactile dimensions to it.

(viii) Objects being spoken about in the curriculum should be put on display and changed from time to time. Here the creativity and innovativeness of the teacher is of prime importance to rouse the interest of the visually impaired child. The teacher should also encourage visual and exploratory touching and examination of the objects by the child, as this helps in better concept formation and development (Lowenfeld, 1974)

(ix) The seating arrangement and position of classroom furniture can influence both the work of the class and the teacher's control on the children. Furniture should be arranged to maximize control allowing the teacher to see what is going on and be seen by all pupils, Lucas and Thomas (1990) In urban schools raised desks can be used to prevent continual stooping over near vision tasks Continual attention to good posture is needed with the visually handicapped However, depending on the lighting required by the visually impaired child seating arrangement should made. A horseshoe arrangement can be practiced even in Indian classrooms where there are many children. This is both practical and possible as in many villages children sit on mats that can be moved around easily, depending on the desired arrangement

(x) During group activities the visually impaired child should be placed near a sighted pupil thus facilitating the child-to-child approach This helps the teacher as well. Groups can be formed on the basis of ability, interest, skill or friendship depending on the activity being done, for example, if a project is being done on different topics, then groups can be formed on the basis of interest

(xi) Sound in the form of background noise should be controlled as visually impaired children depend greatly upon sound cues in the class. Coir matting can be used to reduce environmental noise

Equipment and Material

Equipment and materials are necessary for effective curriculum transaction and adaptation to take place for the visually impaired child in an integrated setting Teaching of most subjects will involve the purchase, use and storage of two kinds of materials—communication aids and reprographics.

Communication aids are necessary for individual communication needs and broadly the following items could be kept in the class

(i) Table lamps
(ii) Tape recorders
(iii) Large print books and worksheets
(iv) Raised desk-tops
(v) Simple magnifiers
(vi) Optacon or Delta (could be got from the special school or Area Resource Centre)
(vii) Braillers
(viii) Special drawing Aids
(ix) Typewriters

Reprographics in the form of large print, braille, tactile diagrams and audio tapes, should be accessible to the child Provision should be made not only for the supply, but also storage and maintenance of equipment and materials.

In India due to financial constraints and non-availability of sophisticated technological equipment like the Versa Braille or Viewscan Text system besides others, it is the responsibility of the innovative teacher to devise and adapt materials and methods of presenting the curriculum in an accessible form to the visually impaired child. Some ways in which this can be done are :

(i) The teacher reads out what is being taught clearly and loudly.
(ii) Hand-outs in black ink on white paper can be transcribed into large print with the help of other students in the class.
(iii) The pupils position in relation to the displayed work should always be considered.
(iv) Thermocoule objects or things out of locally available material can be made for clarification of concepts.
(v) The need to build up effective study habits is also essential as the child will have to undertake independent study sooner or later.
(vi) The pupil should be encouraged to contribute to the discussion and determine the best ways of presenting materials for his individual needs.
(vii) Books of a manageable size with clear print having a dark contrast against a light background should be used by the teacher.
(viii) Maximize use of the other senses i.e. auditory, touch and smell, should be made in the teaching-learning process

Time-tabling

It is the time-table structuring that affects the child's behaviour in individual lessons.

— There should be an effective mix of individual and group work, throughout the day.
— The more difficult subjects could be taught in the morning when children are fresh.
— Flexibility should be kept, but not too much so that children get confused and take time to settle down to doing any activity.
— Learning activities can be taught through games, project work, discussions and practical work, not depending too much on theoretical work, which may become boring.
— Provision should be made for allowing the visually impaired child to spend time on the supplementary curriculum related to, mobility training, improving communication skills and daily living skills, during the daily time-table, with a peripatetic teacher if so required
— Activities can be planned for involving parents, classmates and other people of the local community.

Classroom Control

Effective teacher-pupil interaction depends upon good class control. Control has been operationally defined as :

> "the process of running an organised and effective classroom, in which the individual abilities and needs of children are recognised and catered for in order to develop and facilitate the teaching-learning process to the maximum, in an orderly manner".

This control can be attained if the teacher,

(i) makes the aims and objectives of the class and lesson very clear to all the pupils.
(ii) clearly enuciates the steps of how to attain the objectives to the students.
(iii) decides upon what kind of materials and aids are required for teaching and other activities.
(iv) takes into consideration the individual expectations of each student, not only the visually impaired child.

(v) assesses the need for special provisions or aids to be made or adapted for the visually impaired child.

(vi) decides carefully what procedures are needed to evaluate the teaching-learning process for maximum feedback, and then improves upon it

(vii) decides upon the rules and regulations of classroom behaviour and discipline.

(viii) establishes a regular class routine, by assigning activities, duties and responsibilities to all the children, irrespective of their special needs

(ix) self-management techniques should be encouraged and taught to all children.

(x) acquiring professional help and support for the visually impaired child through the special school or Area Resource Centre

(xi) encourages participation in decision-making

(xii) develops individuality and self-expression

(xiii) use of the behavioural techniques of reward, punishment, task analysis, prompting and others for the benefit of all concerned.

Room Management Techniques

Room Management was developed at the Mental Handicap Applied Research Unit in Wales, to increase the engagement of adults in the special needs unit of adult training centres. Briefly, roles and duties are assigned to all those involved in managing the group and their activities This was found to be beneficial and has since become an important area of interest and research

Reviewal of Research studies done in the United Kingdom, in Coburn (1989), Westling, Feriel and Swenson (1982) and Millington and Phillips (1986), has demonstrated that the method of classroom organisation in terms of management, can markedly affect the quality and quantity of pupil concentration and engagement, for those with severe learning disability. Further, Porterfield, Blunden and Blewitt (1980) advocated the one-to-one teaching approach while Sturmey, Crisp and Dearden (1983) and Millington and Phillips (1986) found that working in small groups was more advantageous and beneficial to improving a child's level of engagement Another major advantage was saving of teacher time spent on each child individually, Favell, Favell and Mc Gimsey (1978) Due to lack of reasearch in this area in India, to support either form of teaching or classroom management especially in integrated settings, certain room management strategies have been suggested based upon the country's specific problems of—

(i) geo-scatter of population

(ii) sheer number of students in classes (approximately 60 to 80 in one class)

(iii) lack of trained manpower

(iv) lack of facilities and equipment

(v) lack of technological aids and equipment in ordinary schools especially in the rural areas

(vi) need to cater to specific, local cultural needs and problems, which vary from area to area in the country.

With these kinds of problems and barriers the comunity's role assumes great importance Promoting community involvement at all levels has to be encouraged and fostered by the school, its staff and resource teacher

This can be done by :

(i) parents acting as helpers in the classroom on a rotation basis.

(ii) adopting a co-operative teaching-learning approach.

(iii) peer group tutoring and participation in the daily learning activities of the class This should be developed and encouraged by all members of the school staff

(iv) peer group work and interaction should be encouraged more than individualised teaching in the integration of visually impaired children by the class teacher Groups can be formed on the basis of size, composition, arrangement interest and type of learning task. This will also help social integration and adjustment of the child with SEN

Two kinds of group work were practised in comprehensive schools in the United Kingdom— organisational and educational The former is a situation where group members (usually a pair of friends) are seated together and work individually on identical tasks. The latter is a situation where each group is responsible for the completion of a common task through collabration and co-operation, through pooling in the available resources of the group. This has been described by kerry and Sands (1984) as 'whole class teaching'.

(v) peripatetic support services and liaison with professionals must be utilized effectively and judiciously by the teacher in providing supplementary curriculum.

(vi) prior preparation of teachers in the making of suitable aids, by adapting local materials and teaching methods for each individual child

(vii) classmates should be continuously involved in the making of relevant aids, modifying teaching materials and helping the visually impaired child

Some basic principles of effective room management are·

(i) Punctuality of the teacher in coming to the class and finishing the lesson in time The teacher should be there before the students come into the class.

(ii) Lessons should be well prepared in terms of materials and equipment This becomes more relevant when visually impaired children are in an integrated classroom setting.

(iii) Teachers should focus on the task to be done. Interest should be kept up through a flexible teaching approach

(iv) Getting the attention and co-operation of all the children before starting work. Prompting can be used For the blind child, calling his name, tapping on the table or making an effective sound, to catch his attention may be used.

(v) Using the voice clearly, effectively and ,expressively, is doubly important for the visually impaired pupil.

(vi) Moving around the room, to identify children having problems and keeping alert. Questions should be answered.

(vii) Teacher should be alert, analytical and observant to the child's needs, moods and requirements. Some flexibility is necessary if the child with special needs is bored, moody of does not understand the lesson being taught

(viii) Should any crisis arise, clear well-understood strategies should be used.

(ix) Equal attention should be given by the teacher to all pupils as far as possible, more so in integrated settings

(x) Comparisons should not be drawn between children, especially between sighted and impaired pupils. Attention can be drawn to the work done not to the pupil's disability/impairment

(xi) Behavioural techniques can be used such as rewards, punishments, promoting, task analysis, observation, changing setting conditions and others This should de done in a judicious manner as normally teachers use these techniques unconsciously

The usefulness of these techniques is that they:

(i) help the child to work to the best of his or her ability by improving the level of attention and concentration;

(ii) keep everyone engaged productively in some useful or relevant learning activity;

(iii) help the teacher and the pupil to use the efficiently, and

(iv) provide easier access to the curriculum as the environment is stable and conducive to the teaching-learning process.

The ultimate or end-result being the creation of a favourable and enjoyable teaching-learning situation within the general classroom setting, for all students

Conclusion

The fairly detailed model of classroom organisation and management just presented is based on the provision, adaptation and interaction of necessary inputs and conditions with reference to five major areas The interplay of these areas highlight the need for a 'whole school approach' through the effective management of resources This will undoubtedly require adjustments in professionalism and professionality, and can be achieved only through the participation of teachers.

The fruitful intermix of all the above factors depends on the teacher who plans, designs, formulates and implements various strategies together with students, resulting in the organisation of a favorable classroom environment

In conclusion, however, it must be acknowledged that there is no one form or model of school or classroom organisation and management that can be labelled or prescribed as the 'most appropriate' for successfully integrating visually impaired children into ordinary schools. The approach has to be flexible, holistic and yet individually oriented to attain any measure of success in a vast and diverse country like India

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Assessing and Teaching Techniques for Children with Special Needs in the Resource Programme

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The development of child's cognitive abilities largely depends on his interest and motivation in the subject as well as the socio-emotional enviornment around him Children with special needs and those with behavioural problems should be studied by the resource teacher in all aspects related to classroom behaviour and interactions The author discusses various assessment techniques in this regard The problem gets resolved more profitably when parents and teachers work together for planning and implementing a mutually agreed strategy

TODAY, classroom teachers are expected to cope with most children who have behaviour problems. In most cases, the principal and/or the counsellor are the only support available For example, children who misbehave are usually sent to the Principal on Vice-principal on disciplinary action. These administrators might punish the students, send a note home to their parents, and/or suspend them from school for a short time. On the other hand, the Counsellor might work with some children who are very withdrawn, socially rejected by their peers, or chronic discipline problems If a student's problems are severe and persistent, the teacher might refer him/her to be tested as a possible candidate for special education — to be diagnosed as emotionally disturbed or behaviourally disordered. These children are usually placed in special classes or remain in the regular classroom and receive resource support. Unfortunately, identifying and managing the situational variables that might be associated with or contribute to the unwanted classroom behaviour receives little attention. Such matters as the referring teacher's skill in coping with disruptive behaviours, the social climate of the classroom, the demands of the curricula, the student's relationship with his/her peers, the parents' support for the educational programme, and the interactive nature of all of these variables must be considered if a comprehensive approach to dealing with unacceptable classroom behaviours is to be tried. Changes in situational aspects of behaviour will ameliorate or at least minimize a student's problem in confirming to the expected classroom behaviour standards

Since resource teachers are expected to assess the child in the regular classroom and to consult with both parents and teachers, they are in a unique position to observe, document and deal effectively with these situational variables. Also, they must be prepared to conduct this broad-based situational assessment for most students referred for resource support, regardless of whether the problem is in reading, spelling, language, mathematics or classroom behaviour This assessment is important because the development of a child's academic and linguistic ability largely depends on his/her attitudes and motivation as well as on his/her social and emotional environment.

Analysis of the Learner in the Classroom

All teachers vary in their expectations for and tolerance of children relative to attention, motivation, conduct, study, and independent work habits Classrooms also differ in their organization, climate, amount of student movement permitted, classroom rules, and structure In addition, all children react differently to the requirements of an interactions among teachers, classrooms, and curricula. Because one important goal of the resource teacher is successfully to maintain the child with a problem in the regular classroom, careful attention must be directed toward managing his/her behaviour in that setting. To accomplish this, the resource teacher must first obtain valid information about the referred student's classroom behaviour and interactions. Some of the data required are discussed below:

1. What are the school policies regarding students who are inattentive, withdrawn, aggressive, conduct problems, or poorly socialized?
2. What is the referred child's previous record regarding behaviour ?
3. What is the precise nature of the student's classroom behaviour as noted by the regular teacher ? ✓
4. Are the teacher's complaints confirmed by the resource teacher's direct observation ?
5. What is the general classroom climate ?
6. How is the classroom organized ?
7. What are the classroom rules for behaviour ?
8. Are the consequences of misbehaviour and good behaviour specified ?
9. In the past, how has the teacher dealt with the poor classroom behaviour of a referred child ?
10. What is the referred child's status in the classroom ?
11. What is the student's physical position in the classroom ?
12. What is the child's behaviour during direct instruction ?
13. What is the child's behaviour during independent study and work ?

14. What are the referring teacher's expectations for the student relative to independent study or work ?
15. What does the referred student appear to like to do in the classroom ?

The resource teacher should discover what the child likes as it may be helpful in preparing a workable and practical educational plan The resource teacher should have a good idea of the student's problems in the regular classroom. He/she should also have a lot of information regarding the practices of the classroom teacher relative to this particular student as well as to the class as a whole. He/she may now want to undertake a more specific individual analysis of the referred student's behavioural problems Hopefully, most resource teachers will feel they have enough information about a child after analysing the learner in the regular classroom and can begin to plan and implement an educational plan without further delay.

Assessment Techniques

There are six different assessment techniques that provide information on various aspects of classroom behaviour. For the most part, these assessment techniques can be administered in the regular classroom and account for situational variables in that setting. Therefore, they are particularly useful in a resource programme operation. The assessment techniques discussed are : (1) The Hewett Approach; (2) Ecological Assessment, (3) Teacher-Devised Informal Checklists; (4) Teacher-child Interactional Analysis; (5) Sociometrics; and (6) Specific Behaviour Measurement.

1. *The Hewett Approach*

Hewett (1968) has proposed a developmental sequence of seven educational goals. For children to learn successfully in school, they must

(i) pay attention — they must be able to focus on the relevant cues in the environment before learning can occur (Attention Level),
(ii) respond to something they have noticed (Response Level),
(iii) respond in an ordered manner (Order Level),
(iv) explore their environment (Exploratory Level);
(v) learn appropriate social behaviours (Social Level),
(vi) have mastered basic intellectual and adaptive skills so that they can obtain information about the environment (Mastery Level), and
(vii) be self-motivated and independent in their pursuits of achievement in intellectual and adaptive skills (Reward System).

Hewett (1968) provides an assessment inventory to measure a child's status relative to each step of the sequence

2. *Ecological Assessment*

Ecological assessment is a way of looking at an individual that considers the many environments in which he/she operates as well as his/her interactions in those various environments. The major environments studied in most ecological assessments include the school, home, community, and peer interactions The resource teachers may limit their investigations to environments existing within the school — the regular classroom, the resource room, the playground, the gym, and the music room, for example. Comprehensive ecological assessments of environments outside the school are too timeconsuming and should be done by the school psychologist, social worker or other professional person. The concept of in-school ecological assessment is relevant to the resource teacher. It gives the resource teacher an opportunity to observe a referred child in several environments. Ecological assessment also gives information on both the positive and negative factors in the child's environment. Further information on ecological assessment can be had from the works of Wright (1967); Marjoribanks (1972); Randhawa and Lewis (1973), and Laten and Katz (1975)

3. *Teacher-devised Informal Check-lists*

The easiest, most relevant and straight forward technique for obtaining information about children's class-room behaviours is the use of teacher-devised informal checklists. After becoming familiar with the literature on behaviour management and with the problems most often exhibited by students in their schools, resource teachers should develop their own assessment check-lists. After observing the child in the classroom, the regular classroom teacher and/or the resource teacher can complete the check-list on referred students. To devise a check-list, a group of teachers list the problems they most frequently encounter in dealing with children's behaviour The resource teacher should structure the development of such a list by making sure that all important variables that assess classroom behaviour are included. The check-list should cover at least three categories of behaviour : (i) child behaviours; (ii) teacher-child interactions; and (iii) child-child interactions. Once the problem in a specific category has been determined, a more in-depth probing can be made of that area.

4. *Teacher—Child Interactional Analysis*

After observing the referred child in the regular classroom, the resource teacher may suspect that some of the problems relate to the types of interactions between the teacher and the child. For example, regular classroom teachers may ignore referred children, be overly critical of them, or deal with them in a strained or uncomfortable manner. In turn, children with behaviour problems may react in a hostile, passive-aggressive, and/or fearful fashion. Because a respectful and acceptable relationship between a student and teacher is highly conducive to learning, many professionals have developed procedures for measuring the quality and quantity of teacher-child interactions (Brophy and Good, 1974, Flanders, 1970; Medley, Schluck, and Ames, 1968).

5. *Sociometrics*

One important factor in children's adjustment to school is the extent to which they are accepted by their peers. Because of their maladaptive classroom behaviours, many children are socially rejected, withdrawn, and find few rewards in the social aspects of their school experience. Other behaviour-problem children become leaders of small classroom revolts and lead their peers into breaking rules and fighting. Children with social problems need help if they are to adapt successfully to the demands of the classroom and the school. The resource teacher may thus want to analyze the problem child's social position. One method of determining a child's social standing in a classroom is through sociometric analysis (Moreno, 1953). In this technique, each child in the classroom is asked to choose two children with whom they would like to play, eat, work, or perform any type of classroom or social activity By studying the results of such a questionnaire, the resource teacher can determine the social status of the problem student as viewed by his/her peers. For example, do any of the students pick the problem child to play with ? Who are they? Who does the referred child pick to interact with ? The responses of the students should be secret, that is, the questions should not require the students to give a verbal response in front of the entire class The information from the sociometric evaluation can have direct implications for remediation. Peer tutors can be selected on the basis of this type of information, and social situations between students can be arranged and monitored to some extent

6. *Specific Behaviour Measurement*

In most cases, the resource and regular classroom teacher will have isolated a particular troublesome behaviour in analysing the learner in the classroom. For example, the referred child, Mary, is frequently out of her seat during instruction and is disturbing other students. The resource teacher can deal with this behaviour in at least three ways First, Mary can be assigned to the resource room where she is taught to remain in her seat for longer and longer periods of time while engaged in some academic task She can then return to the regular classroom with the hope that the successful behaviour will generalize to the regular classroom.

The second option is for the resource teacher to suggest techniques that the referring teacher can use in the regular classroom. These techniques might include giving Mary tangible rewards, free time, praise, encouragement, etc. when she remains in her seat, for longer periods of time. These two options are direct attempts to provide immediate remediation in response to a specific problem behaviour The third option could be the measurement system. In this approach, the resource teacher and/or regular classroom teacher gather baseline data on a child before implementing a remedial programme For a short period each day, they note the number of times Mary leaves her desk inappropriately The most popular approach to organizing the accumulated data is called graphing — the child's out-of-seat behaviour is plotted on the graph The vertical axis indicates the number of out-of-seat behaviours; the horizontal axis indicates the number of times (days or periods) the behaviour is measured. Of course, Mary should not know she is being observed By comparing the number of these inappropriate behaviours occurring during the treatment period with the number occurring during the baseline period, the teacher can objectively evaluate the effectiveness of the intervention strategy.

Instructional Procedures

By using one or more of the assessment techniques discussed, the resource teacher should have gathered enough data to begin to develop and implement an instructional programme In a few cases, a particular child's problems may be too complex for the resource teachers to handle On these occasions, the resource teachers should seek the assistance of specialists in mental health (a Psychiatrist), a teacher of the emotionally disturbed, a clinical Psychologist, a Counsellor, and/or a Social worker. In most instances the resource teachers will proceed with an instructional programme on their own, only after several attempts have been tried, evaluated, and found not to work, will they request additional help. Teachers can use many techniques to deal with students who demonstrate inappropriate classroom behaviours. These techniques have been divided into seven categories (1) Adjusting the Curriculum to Meet Individual Needs; (2) Modifying Specific Behaviours; (3) Changing Teacher Attitudes and Skills; (4) Teaching Affective Abilities; (5) Parental Participation in Securing Behavioural Change. (6) Use of Peer Tutors; and (7) Other Specific Approaches like Life Space Interviewing (LSI); Reality Therapy, Role Playing; Values clarification and Contracts.

The author stresses the importance of parental participation in the educational process with students assigned to the resource programme. The more profitable approach is for the parents and teachers to work together on planning and implementing a strategy to resolve one or two particular behaviours at a time. Here are some guidelines about developing a home and school programme, for a referred student who has problems in classroom behaviour.

1. Both the parents and teachers should agree on the child's major problems and work together to alter a specific behaviour. This agreement will provide some consistency in the plan.
2. Parents and teachers should develop a communication system together Periodic phone calls, daily report cards, checklists, and conference meetings can also be utilized effectively in some cases.
3. The parents, teachers and child should develop the reward system to be used. These rewards could include free time, extra television or playing time, a trip to a fair or zoo, and/or a period of time over the weekend when the parents do something the child likes to do.
4. The rules of the programme must be clearly and carefully explained to the child, i.e. what he/she must do to achieve a reward

With the background derived from this discussion, and with a bit of trial and error experience, most resource teachers should be well-equipped to plan appropriate instructional programmes for children with classroom related behaviour problems.

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Measuring Students' Progress in Vocational Education

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Evaluation of students' progress in vocational education is a complex process It includes assessment of progress in all the three aspects of cognitive, affective and psycho-motor in a variety of formal and informal situations Obviously, this would require use of different tools and techniques by the teacher It is only through objective evaluation and continuous feedback that the desired competencies can be effectively developed to make the products acceptable to the employers

Good teaching in vocational education is assessed in terms of the accepted objectives The vocational teachers' aim in the teaching-learning process is to change the students' behaviour or to develop desirable theoretical and practical skills. Thus a very important task for the vocational teacher is to determine what kinds of skills are desired and focus evaluation on appraising whether or not the behavioural changes are in the desired direction. The main function of evaluation is to measure the attainment of the students in terms of the objectives set The salient features of measuring the progress are — what to evaluate, who to evaluate, how to evaluate, when to evaluate, and what for to evaluate

What to Evaluate ?

The scope of evaluation in vocational education includes students' academic achievement, manipulative skills and personality traits consisting of attitudes, sentiments, habits, abilities, behaviour and manners. Thus evaluation is no longer academic as in the past, but is becoming more and more comprehensive, assessing all the aspects.

Who to Evaluate ?

For evaluating students' progress in vocational education a number of persons are involved such as—vocational teacher, principal, internal and external examiners, industry supervisor and the employer who provides on job training facilities The examinations are internal and external. In a majority of cases, the final examinations are totally external, wherein neither the vocational teacher nor the principal, who knows the vocational students, examines them. Some unknown outside examiner is invited with the right and responsibility to examine the students' achievement finally. In most of the developed countries examinations in vocational education are 100 per cent internal. As per the new education policy, the modern trend in India is also to give more and more weightage to internal evaluation. In several recent conferences, 80 : 20 or 50 : 50 ratio (external to internal) has been suggested. However, there are some practical difficulties. The subjective element that comes to play in the teachers' judgement of the student may lead to some vocational teacher misusing the power Besides, the parents and local leaders may bring undue pressure on the vocational teacher and the principal Despite these difficulties, there is a gradual shift in the pattern of examination from the external to the internal.

How to Evaluate ?

The vocational teacher needs to use a variety of tools and techniques of evaluation to suit the needs of varying situations. These are many devices such as oral test, written test, performance test and observation.

When to Evaluate ?

Evaluation in vocational education should be a continuous process from the beginning to the end and the follow-up as all the skills are imparted in a particular sequence. Tests are to be conducted after every operational stage In this continuous evaluative process weightage is given to periodical tests, practical work, performance tests, product and process evaluation, class assignments, project work, development of personality traits and other abilities.

Evaluation — What for ?

A good vocational school uses certain admission tests at the time of giving admission to students in vocational courses This is called 'diagnostic testing' A vocational teacher uses certain evaluative tests to know their strengths and weaknesses and to find out the effectiveness of his teaching. One of the reasons for evaluation is of 'passing judgement' on the student, to 'pass' or 'fail' him.

An Ideal Programme of Evaluation

Before designing any question paper, the vocational teacher needs to list the aspects to be judged—content, choice of types of items, administration procedure of the test, scoring and interpretation Scoring should not be influenced by personal bias and opinion. An ideal programme of evaluation should have eight qualities—validity, reliability, continuity, diagnostic quality, motivational quality, objectivity, practicability and simplicity. Validity means that it should evaluate what it is supposed to evaluate. Reliability means it should give the same results when repeated or when different devices are used. It should be a continuous process. It must supply diagnosite data about students — their strengths, weaknesses and interests. By using skillfully such data further learning can be motivated. Evaluation should be free from bias or prejudice Objectivity means that it should not be based on unsupported opinion or wishful thinking. It should be practical and should be simple, clear, precise, easy to use, easy to understand and easy to summarize and interpret.

Criteria and Weightages

While preparing a scheme of assessment a vocational teacher has to consider the following major aspects and scoring points :

1. Knowledge and understanding
2. Development of skills
3. Development of personality traits

In fact knowledge is the memory of learnt facts but loading brain with information alone can never be the objective of vocational education. What is desired is the understanding of certain facts and concepts relevant to the vocation and related subjects? This will help a vocational student to do his job intelligently and successfully. However as knowledge is one of the major objectives of vocational education at the +2 stage, this aspect has to be evaluated properly. Vocational education subjects are mainly skill subjects. A good teacher must understand that skill building is different from learning a non-skill subjects Important differences exist between techniques to evaluation in theoretical and practical subjects In a skill building subject we are concerned with the development of correct techniques, i.e. correct ways of performing the skill. On the other hand, in a non-skill area we are mainly concerned with the development of knowledge and understanding. Skill means dexterity, expertness and practiced ability The physical responses become much more important than mental responses.

In the absence of this a vocational student cannot become an efficient and effective worker This aspect has to be given due importance as this is the most important aspect in a vocational education programme. The teacher has to see that the students have developed vocational skills e g systematic and orderly work habits, economy of time and resources, and quality of job including the finish. Extra-ordinary abilities of the students have also to be judged. The behavioural changes in the student to be judged are—he can produce articles of quality much better than expected of his age, he has the power of innovations in his area of work, he experiments with methods leading to better results and he can produce an article of better utility and higher sale value within a reasonable time.

Certain personality traits are very much needed in developing manipulative skills. A skilled worker is required to possess such qualities as good work habits, diligence and perserverence,, cooperative attitude, ability to communicate, punctuality, ability to take risk, quick decision, intelligently performing the job, initiative, planning in advance, etc While evaluating the students' progress at the end of the year these aspects are to be taken into consideration and should be given proper weightage

Assessment of Students' Performance

1. *Attitudes, Work Habits and Work Ethics*

   - Willingness to work
   - Pleasant disposition
   - Ability to work with others
   - Responsibility
   - Neatness and orderliness

- Respect for authority
- Regularity of attendance
- Punctuality
- Honesty
- Thrift
- Inventiveness
- Risk-taking abilities

2. *Skills*
   (a) *General Work Performance*
   - Motivates to work
   - Work consistently
   - Monitors own performance
   - Organises own work area
   - Cares for tools, equipments, etc.
   - Works un-supervised
   - Makes decisions independently

   (b) *Work Quality*
   - Works accurately
   - Discovers own errors
   - Overcomes own errors
   - Expresses interest in product and/or completed jobs

   (c) *Work Quantity*
   - Achieves speed comparable with workmates
   - Expresses interest in own productivity and output
   - Seeks alternatives when job is completed
   - Seeks means to increase output

   (d) *Work Process*
   - Draws appropriate plans
   - Implements accurately, effectively and efficiently
   - Copes with problems faced during the process
   - Follows safety regulations
   - Evaluates for better future plans

3. *Achievements*
   - Knows the names of the tools, spare parts and their proper use
   - Can tell the correct procedures
   - Achieves needed accuracy and precision
   - Works safely, observing standards

Weightages are assigned for the different aspects, the sum total of the "scores" must be translated to a 100 per cent basis. Then the final rating of the students can be determined.

Importance of Skill Development

It is expected that in evaluation of students' performance paramount importance should be given to skill development This will have to be reflected in fixing the weightages. Suggested weightages may be :

1. Knowledge and Understanding	25%
2. Attainment in Skill	50%
3. Extra Proficiency in Skill	5%
4. Dignity of Labour	5%
5 Initiative	5%
6. Planning in advance	5%
7 Cooperative Attitude	5%

Process and Product Evaluation

A good test in a skill subject should be easy to score. It should allow the use of key marking so that all the essential features of an expert performance are checked more or less automatically and without subjectivity. This saves a great deal of time and simplifies the work of the evaluator

While conducting a process test at the time of performing the skill by the students a great deal of attention should be given to proper techniques, i.e. proper techniques of performing the skill The evaluator may prepare a technique check sheet for rating the excellence of student techniques and some criteria may also be decided for awarding grades or marks.

The main features of all expert performances are — (1) a steady and uniform flow of motion, (2) easy and economical movements, (3) relaxed performance, (4) concentration upon the task, and (5) intelligent use of the senses. Award 'A' if all the five qualities are in existence, 'B' is four qualities are there, 'C' for three qualities, and so on. Automatization is the goal of the skills course because the test of any skill is the ability to use it. Mastery is said to be achieved when the skill can be exercised quickly without giving much attention to it. Therefore, the chief characteristic of perfect mastery in a particular skill may be identified and the marking scheme/grading scheme should be prepared accordingly.

Sometimes evaluation is done when practical work is in action, i.e. at the time of external examination. For this purpose a technique check sheet may be used. An example of a technique check sheet is given below :

TECHNIQUE CHECK SHEET

Rating : Superior	3 points
Satisfactory	2 points
Needs improvement	1 point

First characteristic of a good performance____
Second characteristic of a good performance__
Third characteristic of a good performance____
Fourth characteristic of a good performance___
Fifth characteristic of a good performance ___

Note : It is suggested that 12 or more points be required for grade A, 10-11 points for grade B, 7-9 points for grade C, and 3-6 points for grade D

In evaluating a finished product also similar variables may be identified e g 'A' may be awarded if the article is saleable on a higher price, 'B' if saleable on market price, 'C' if saleable on lower than market price, 'D' if the article is not saleable but usable and 'E' if the article is neither saleable nor useable

In case of jobs of service type a similar technique may be adopted e.g. 'A' may be awarded if the performance is excellent or one of the best, 'B' if it is very good but not the best, 'C' just tolerable, 'D' inferior and 'E' for no good or useless

Vocational subject being predominantly practice oriented, the weightage to the theory basic to the vocational practice may not exceed 25 per cent of the total weightage given to the vocation in any case.

The ultimate assessment in a particular vocational course will be an average of the entries made in the record.

A well-finished product should be evaluated as first rate, but if the time, energy and money put into its production are excessively high, the student's performance should be rated as low. A well-turned-out product with minimum inputs of time, labour and money but maximum inputs of imagination, originality, precision and persistence on student's part will give him a high rating on his performance.

Weightages, Modes and Tools

Area of Evaluation	Weightage	Mode of Evaluation	Tools of Evaluation
Cognitive - Knowledge - Understanding	25%	Oral test Written test	- Test items - Written assignment
Affective Good work habits - Planning in advance - Dignity of labour - Initiative and interest - Commitment - Attendance - Extra proficiency in skill - Cooperative attitude	25%	Observation	Check-list for - Self-evaluation - Teacher's evaluation - Community's evaluation
Psychomotor - Attainment in skill - Use of tools and manipulation of material - Finish - Body posture - Avoidance of wastage (time and resources)	50%	Observation Performance test	Check-list for - Self-evaluation - Teacher's evaluation Community's evaluation - Evaluation record

At the + 2 level, under the vocational stream a bold attempt has to be made to dispense with the public examination system and to adopt a system of continuous evaluation. It is not necessary to assess every part of learning. It is recommended that the "Selected problems plan" in grading and evaluation may be used, that is, choosing for grading certain exercises and problems that sample the students' skill and job proficiency Two-thirds of the final grade for the grade period should be based on the grades for the selected exercises referred to above, and one-third of the final grade be based on the final test result The teachers should not place faith in a single record but should consider a series of records before attempting to measure progress

Yoga in Educational Institutions

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Various yogic practices done under careful supervision of a Guru help in physical, emotional, and intellectual development In a school situation these do not require much finance or standard equipment Being non-competitive and individualistic in nature, these can be practised by all even at home. Therefore in order to have systematic instruction in yoga within the school system the author stresses the need to develop a well-structured and graded syllabus instructional material based on it and intensive training of teachers

THERE is a world-wide interest in yoga at present and it is growing day by day. Almost every country has a few yoga centres run by enthusiastic individuals following different methods of yoga taught to them by their teachers or learn by them through books This interest is especially noticeable among the youth of the developed countries, and in some educational systems of these countries yoga in some form or the other is finding a place. In India education in yoga is being given on traditional lines in certain selected institutions and there are many yoga centres scattered all over the country imparting instruction in yoga to the interested individuals There are also certain schools and school systems where yoga is taught in some form or the other There are many Gurukulas in India which are imparting yoga education in a systematic manner.

There is a growing consciousness among Indian educationists, including principals and teachers in schools, to give a different and better type of education to our children and many of them have shown interest in learning and teaching yoga It is thus high time now to do systematic thinking about giving yoga a place in the overall educational system in our country. In a democratic set-up like ours, there is a great need for the development of mass physical education, sports and mass yogic practices, for better health and fitness

Yogic practices which constitute Asanas, Pranayamas, Kriyas, Bandhas and mudras, Dhyana, etc. can help one to achieve and realise physical toning, emotional stability and intellectual firmness. For correct health habits Yamas (moral restraints) and Niyamas (ethical observances) are given foremost importance. For general health and fitness, muscular work should be physiologically and hygienically of the right kind. Asanas can very well serve this purpose. Pranayama leads to tranquilisation and consequently to the removal of the psycho-physiological disturbance. Kriyas lead to the removal of lethargy and efficient detoxication and proper toning up of internal or ANS which is so essential for efficient and vigorous life. Bandhas and Mudras help in bringing steadiness and stability in the body and mind by tackling voluntary and involuntary musculature.

The concept of total well-being lies in the maintenance of good health habits, dieting, physical and emotional balance. Spiritual well-being is also a factor in total well-being. The philosophy is to live a life that is happy, healthy and productive and yogic practices certainly will be able to fulfill these objectives. The following are some of the plus points of yogic practices ·

1. Requires not much finance.
2. No standard equipment needed
3. Not much space is required.
4. Individualistic in nature.
5. Not competitive in nature.
6. Not repetitive.
7. Can be prescribed for all ages irrespective of cast, colour and creed.
8. Not much time being consumed.
9. Can be practised at home or outside.
10. Can be used as preventive as well as curative measure against certain disease.

The development of one's physical potential is as the development of mind and spirit. As a progressive, democratic country, we should provide ample opportunity for dynamic expression of personality through physical education, sports and yogic practices. To achieve this, a broad-based programme must be provided at various stages of life. Physical education, sports and yogic practices should form an integral part of education in the development of men and women in our country and priority in the plan should be given to the development and implementation of physical education, sports and yogic practices in rural areas People assembly, Council of Ministers, Central Education, Sports and Health Ministers, State Secretariat for Physical Education and Sports, Sports Federations, Trade Unions and Cultural Organisations should work close together in order to assure this movement.

One is reminded in this context of the strong recommendation of the education and sports policies that besides education in natural and social sciences, there should be given proper education in spiritual values so that our students develop a balanced personality. Education in yoga is the surest way for the development of a harmonious personality from the physical, mental, intellectual and spiritual angles. Thus any effort in this direction would be in keeping with the declared educational objectives of the Government.

The following points are to be kept in mind while developing a programme of yoga education in our schools ;

1. Yoga should become an integral part of school education rather than remaining an appendix. In other

words, the whole atmosphere in schools should be such as to lead to the development of yogic values in children.

2. There should be a balance in the teaching of various aspects of yoga-physical, mental, intellectual and spiritual.
3. The programme for yoga education in schools should have a rational and intellectual approach so that all teachers and students can follow it unhesitatingly.
4. Yoga is equally useful for all people without distinction of cast colour, creed or nationality. This universal aspect of yoga should be highlighted in the programme

A well-graded syllabus in yoga for various schools stages is the first requirement This has to be done very carefully and systematically Roughly speaking, there would be transition from the physical to the spiritual aspects of yoga with the advancement of the age-group of students, but how much of yoga a student can learn will depend on his aptitude, needs and learning capacity.

When the syllabus is ready, the next logical step is to develop instructional material for yoga education. This would take the form of a series of textbooks, supplementary reading books, charts, filmstrips and films. Luckily a lot of material is already available in this field which can provide a starting point for the development of further instructional aids Full use will have to be made of the audio-visual facilities of instruction available to us at present

No scheme of yoga education in schools will succeed unless properly trained teachers are available in all schools. This will involve inviting thousands of teachers from all over the country to certain selected centres of yoga education and training them in short-term courses in the philosophy and practice of yoga. Our objective should be to have at least two or three teachers in every school who are properly trained in various aspects of yoga. Initially, it will involve a considerable amount of expenditure but the money invested will be doubly repaid when we have a better generation of students who lead a very constructive life and do not indulge in destructive tendencies of present-day youth

To sum up, the teaching of yoga at the school level or in the educational institutions opens up vast potentialities of building a new India through the balanced development of the Indian youth from the physical, mental, intellectual and spiritual points of view and thus deserves the support of the government for inclusion yoga in the National Sports Policy and its implementation effectively

Relative Importance of Teaching Skills : Views of Secondary School Teachers

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This study was conducted on 300 secondary school teachers drawn from three districts of Himachal Pradesh The main purpose of the study was to determine the relative importance of various teaching skills in terms of preferences of practising teachers. Fifteen most commonly described teaching skills were finally retained. Preferences of the teachers were obtained through the method of paired comparison The results of the study show that the teachers considered those skills relatively more important which either promoted maximum student involvement in the teaching-learning process or were helpful in accelerating the pace of teaching by compensating for lengthy explanations. On the other hand, the skills retarding the pace of teaching were rated as least important. The skills of promoting pupil participation, using teaching aids and questioning, were thus judged as the most important teaching skills.

TEACHING is a complex act. For its accomplishment one requires a certain amount of knowledge, a minimum level of understanding and expertise in various teaching skills. The whole act of class-room teaching can be divided into two main phases, viz. interactive phase and non-interactive phase. The latter can further be sub-divided in two stages, i.e. pre-interactive stage and post-interactive stage. The main body of the teaching act is constituted by the interactive phase, while the other two stages can simply be termed as the appendages of this phase. The pre-interactive stage involves planning and preparation for the interactive stage. This stage is generally utilized for lesson planning, collecting and preparing teaching aids, preparing tests for evaluation, and preparation of assignments, etc. The post-interactive stage involves analysis of what has been done in the interactive stage It is in this stage that the teacher contemplates on his teaching, evaluates his teaching and through this feedback tries to modify and improve his interactive phase

The interactive phase is then the only phase where the teacher has a face-to-face interaction with his pupils. All efforts in the pre and post-interactive stages are directed towards making the interactive phase most effective, since whatever transpires in this phase finally determines the outcome of the teaching act. The interactive phase should result in the desired behaviour changes in the students. It is in this phase that the teacher imparts information to the students. However, simply imparting information means little and does not in itself cause learning unless it becomes a meaningful part of the knowledge of the pupils. The learner should be in a position to use this knowledge whenever and wherever the situation may demand from him To cause learning the pupils ought to be prepared to learn If the teacher be considered the transmitter of information, then the pupils as receivers must be tuned to his frequency to enable them to receive the transmission. With mere knowledge of the subject-matter the teacher may fail to accomplish this task. Before imparting instruction the teacher should have a clear idea about the existing knowledge level of the students. He should be aware of the environmental influences acting on the mind of the students at the time of teaching. The teacher should be able to make the pupils free of such influences which may interfere with their present learning. The teacher should know how he can best attract the attention of his pupils and how that attention can be retained throughout. He should be skilled enough to arouse the curiosity and interest of the pupils towards the topic and invite their maximum involvement in the teaching-learning process. There are many such challenges for a person entering the profession of teaching If somehow new entrants in the teaching profession can be prepared to meet such challenges through training programmes, it can then safely be said that the teachers are not "born" but they can be "made". The latter concept acquires greater significance in the light of the challenges being posed by the unprecedented increase in the population of educands and the knowledge explosion. There is no option left but to prepare a large number of personnel ready to meet the challenges of contemporary education Preparing personnel for the teaching profession has become possible to certain extent as the teaching act now can be systematically analyzed and broken into simpler tasks Each task then can be mastered which finally will enable one to master the techniques of teaching.

There are many observable behaviours which the teacher can use in the class to bring home to the pupil an idea, a point, or a thought. Such observable acts or behaviours are termed as teaching skills. Jangira and Singh (1982) defined teaching skills as a set of interrelated component teaching behaviours for the realization of specific instructional objectives The teaching skills are very helpful in making the teaching interesting, attractive, and effective. Many such skills have been identified. The component teaching behaviours of a skill are a set of interrelated atomistic teaching behaviour contributing to the realization of some aspect(s) of the instructional objectives aimed to be realized by the component teaching skills.

A number of attempts have been made to analyze the teacher's classroom behaviour into various teaching skills. Allen and Ryan (1969) suggested 14 teaching skills. A thorough examination of various teaching skills suggested by researchers reveal that all of them have included almost similar types of skills in their list. At times the researchers have sub-divided a skill into two or more skills while on other occasion two or more skills have been combined to make a single skill.

These skills are helpful in making the teaching a meaningful exercise. In their pre-service and some time in service programmes also the teachers are trained to make use of these skills. A pertinent question at this stage would be whether all such skills are equally important for the teacher in all types of classroom situations. Should equal attention be paid to the development of every identified skills. What does the experience of various teachers has to tell in this regard. The present study was undertaken to seek answers to such questions.

Practising teachers who happen to use one or the other skill during their day-to-day teaching are in a best possible position to pass any judgement on the efficacy of different skills. Through their experience in the class they are placed in an advantageous position to assess the relative importance of various teaching skills The results of the studies of this nature can help the curriculum planner/designer of pre-service and in-service training programmes to design the activities of these programmes accordingly.

Objectives of the Study

The study was conducted to achieve the following objectives :

1. To identify the relevant teaching skills suitable for effective teaching at the secondary stage
2. To determine the relative importance of various teaching skills.
3. To identify a cluster of three teaching skills viewed as the most important by the practising teachers
4. To identify a cluster of three teaching skills viewed as the least important by the practising teachers.

Delimitations

The present study was delimited on the following aspects :

1. The study was restricted only to three districts of Himachal Pradesh.
2. The study was limited to the practising secondary schools teachers only.

Operational Definitions of the Terms Used

1. *Practising Secondary School Teachers*

   Teachers who are teaching science, languages, humanities, art or commerce to students of any class from standard VI to plus two stage have been termed as Practising Secondary School Teachers Teachers were invariably trained either B.T., B.Ed., L.T. or J.B.T. (J.B.T. teachers with prabhakar as qualification are teaching Hindi to secondary classes in Himachal Pradesh.)
2. *Secondary Schools*

   Schools running classes from standard VI onwards up to plus two stage were termed as secondary schools.

Methodology

Sample

A sample of 300 teachers was drawn from 36 secondary schools situated in three districts of Himachal Pradesh. The technique of incidental sampling was used to select the schools. All the secondary school teachers teaching science, social science, commerce, fine arts or languages in the selected schools were included in the sample, barring those who were either not interested in furnishing information due to some reasons or were busy in other departmental assignments

Tools

Review of the relevant literature and discussion with the experts in the field proved to be very fruitful and enabled the investigator to prepare a list of various teaching skills for the present study. Finally, 15 skills were retained in the list These are -

1. Writing instructional objectives
2 Set induction
3 Introducing the lesson
4. Explaining
5 Stimulus variation
6. Questioning
7. Class room management
8 Giving reinforcement
9. Prompting pupil participation
10. Using teaching aids
11 Evaluation
12. Lesson planning
13. Pacing the lesson
14 Closure
15. Giving assignment

The 15 skills mentioned above were presented to the subjects in all possible pairs. There were in all 105 such pairs These pairs were then rearranged randomly so as to minimise the carry over effect of the previous judgement of a skill in one pair to the judgement of the same skill in the next combination The list of these 105 pairs was got mimeographed along with an introduction to the tool and instructions as to how to respond to the statements. For the sake of ready reference a brief description of each of the 15 skills was also incorporated in the tool

Procedure

The tool was administered personally to the selected sample of 300 secondary school teachers Rapport was established with the respondents before administering the tools by emphasizing the purpose and importance of the study It was ensured that no item was left unmarked by the respondents. The difficulties, if any, experienced by the respondents were solved there and then

Analysis and Interpretation of the Data

The data were available in terms of comparative judgements made by 300 secondary school teachers to a set of 105 pairs drawn out of 15 teaching skills included in the tool

The method of paired comparisons was used to analyze the data This method was selected as it provides a rationale for ordering stimuli along a psychological continuum, even in those cases where there is no known physical continuum to which the values of the stimuli on the psychological continuum might be related (Thurston, 1927 a; 1927b)

TABLE 1
Scale Value of Different Teaching Skills

Sr. No.	Skills	Scale Value
1.	Promoting pupils's participation	0.880
2	Using teaching aids	0.747
3	Questioning	0.727
4	Explaining	0.579
5.	Evaluation	0.551
6	Giving assignments	0.476
7.	Lesson planning	0.418
8.	Introducing lesson	0.417
9.	Classroom management	0.400
10	Reinforcement	0.273
11	Writing instructional objectives	0.252
12	Stimulus variation	0.216
13.	Set induction	0.172
14	Pacing lesson	0.057
15	Closure	0.000

Table 1 shows the scale values obtained on the basis of the judgement of 300 secondary school teachers for the 15 stimuli representing the teaching skills included in the study. As the magnitude of the scale value represents the importance attached to a particular skill, it may be interpreted that promoting pupils' participation has been viewed as the most important teaching skill at the secondary level teaching. This is followed by the skills of using teaching aids, questioning, explaining, evaluation, giving assignment, lesson planning, introducing lesson, classroom management, reinforcement, writing instructional objectives, stimulus variation, set induction, pacing the lesson and closure. The value of absolute average discrepancy came out to be 0.044 for 15 stimuli.

From the scale values obtained through the method of paired comparison, it may be concluded that the three teaching skills which have been viewed by the teachers as the most important are :

1. Promoting pupils' participation
2. Using teaching aids
3. Questioning

Similarly, the three teaching skills which have been viewed as the least important by the teachers can be clustered as follows :

1. Set induction
2. Pacing the lesson
3. Closure

Discussion

A look at the cluster of three teaching skills which have been viewed very important by the teachers shows that the skill of promoting pupils's participation tops the list. In a democratic set-up like ours promotion of participation of all the members involved in any activity, including teaching, seems logical. By promoting pupil participation the teacher can make the students active. They feel themselves as a part of the activity. The learning process, therefore, becomes a self-directed activity rather than something imposed from outside. Classroom becomes very lively and consequently learning becomes effective and fruitful.

The skill of promoting pupil participation in the teaching-learning process gains added importance in such schools where majority of pupils hail from backward area or belong to a deprived section of the society. The students falling under these categories are very submissive, they act as passive learners. They seldom seek answers to their doubts, very rarely participate in discussions and put across their viewpoints. Thus the whole process is rendered a one way exercise. These students avoid active participation in the teaching-learning process due to utter lack of confidence in their own abilities. Unless the teacher makes special efforts for their involvement, they will remain indifferent towards the whole process and will thus gain very little. The involvement of the students is possible only when the teacher is expert in using the skill effectively In-service and pre-service teacher training programme should take proper care of this fact

The skill of using teaching aids occupies the second place in the list. Teaching aids are best attention callers and facilitate easy and simple comprehension of the subject matter. Appropriate teaching aids allow the students to grasp an idea permanently. At times a teacher is at a loss to make a point or idea clear. He urgently requires some help to supplement his teaching which may help in forming the right type of mental images Teaching aids can best serve this purpose

The schools of Himachal Pradesh included in the study were lagging far behind in the use of teaching aids Neither the school provides them such aids nor the teachers take the trouble of preparing even those aids which cost almost nothing. Barring a few exceptions, chalk-board is the only teaching aid being used in these schools A very high rating, inspite of these facts, reveals that the teachers are aware of the importance of this skill and it should be given due weightage in the training programme

The next skill which finds a berth in the cluster of important skills in the skill of questioning. Questioning keeps the students alert and invites their involvement in the teaching-learning process. It thus partly serves to promote pupil participation, a skill which has been rated as the most important Questioning also serves an important purpose of assessing the progress of learners in the content being taught. It also serves as feedback for the teacher to redesign his teaching as per the needs of the students This could be the plausible explanation for attacking importance to this skill.

The skill of closure occupies the lowest value of zero in the continuum The teachers scarcely use this skill. A very heavy load of curriculum leaves the teacher practically with very little time to use this skill properly The teacher's first priority always is to complete the course of study within the stipulated time period. Using the skill properly will require more time and efforts on the part of the teacher. It can thus be conveniently concluded that this activity in most cases has lost its utility in the practical situations This may be attributed as a reason for its low ranking. Similarly, the skill of pacing also gets a low value in the continuum and matching reasons can be attributed for its impracticability in the classroom situations Even those topics which deserve more elaborate description and explanation are taught at a faster pace due to paucity of time. As is evident from the results of the study, the teachers have generally rated those skills high in importance which help in quick learning Teaching aids, for example, reduce much of theoretical explanation, hence the skill of using the teaching aid has been rated high in importance

The skill of set induction also falls in the category of least important skills, though it has not been viewed as low as the skill of pacing the lesson Field observation during the study revealed that most of the teachers were unaware of this skill Even those who were aware of this skill were of the opinion that even if the teacher teaches a topic straightaway, the pupil can grasp the imparted instruction and that there was no point in spending time for making the pupils ready to receive the information.

This study was conducted on a very small segment of teacher population and cannot be said fully representative. More studies of this nature at a large scale would be useful to confirm the present findings It may, however, the suggested at this stage that teacher training institutions should give adequate weightage to different teaching skills in their curriculum. Further, the teaching skills which have been found to be relatively more important according to the results of the present study, may be emphasised more in the training programmes both for pre-service and in-service school teachers.

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Role Conflict Among Teachers and Some Biographical Variables

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Role conflict results from conflicting expectancies associated with a job It may either act as a motive force behind a programme of change and reform or may bring in a number of adverse effects increasing anxiety, frustration and strain of individuals The author maintains that the teacher's role conflict in this country is a new area for investigation The present study investigates the relationship between particular categories of teachers in terms of sex, age and teaching level and overall role conflict.

ROLE conflict is a term which has been generally used by sociologist and psychologics to denote the problem situations of an individual which he faces as an occupant of a particular role. In the words of Luthans (1973), role conflict results from conflicting expectancies associated with a job. According to Argris (1957), conflict tends to exist when an individual (i) wants to do two things that are liked equally but can do only one, (ii) has a choice to doing the things that are equally disliked, (iii) has the choice of doing something that is liked but runs the risk of loss or punishment, or (iv) has several alternatives of doing something each of which is liked by has an equal risk of some loss or punishment The conflicting situations which trouble role occupants result in certain consequences. The consequences of role conflict vary with the type and intensity of conflict, the context in which it is found and the characteristics of the individual exposed to it. In some cases conflict can be functional to the individual, the organization, and the society. If role conflict acts as a stimulus to the analysis of problems and a motive force behind a programme of change and reform, the individual, the organization, and the society will definitely benefit from that role conflict. Role conflict, on the other hand, can have a number of adverse effects. It can reduce satisfaction, confidence and job performance, and can increase anxiety, frustration and strain of individuals, which in turn, will reduce organizational efficiency by decreasing employees' turnover.

The teacher's role is widely regarded as a classic conflict situation. He as an occupant of social and occupational role is likely to meet with several problem situations while discharging his duties. These situations may arise from a variety of circumstances — the diffuse nature of the role (Wilson, 1962), teachers' concern with status (Tropp, 1957), their exposure to conflicting expectations (Merton, 1957), affectivity and moral orientation of the role (Floud, 1962; Wilson, 1962) and characteristics of the organizational setting (Corwin, 1965; Hoyle, 1965). But the extent to which teachers actually perceive these situations as problems or feel personally troubled by them will, naturally, depend upon a considerable number of mediating variables. Characteristics of teachers—age, sex, qualifications, experience, level of teaching, type of institution, etc — may be some potential mediating determinants of teachers' role conflict experiences. The research conducted abroad, as exists at present, indicates that male teachers are more associated with role conflict than female teachers (Getzils and Guba, 1955; Grace, 1972), more experienced teachers than less experienced teachers (Grace, 1972), trained teachers than untrained teachers (Grace, 1972), secondary teachers than primary and university teachers (Westwood, 1967). The study of teachers' role conflict, however, has hardly begun in India. The purpose of this study was to investigate the relationship between particular categories of teachers (classified by sex, age, and teaching level) and overall role conflict.

Method

The present study was confined to the teachers working in the primary schools, secondary schools and university departments situated at one of the KAVAL towns of Uttar Pradesh. A sample of 171 teachers was drawn by employing multistage cluster sampling method. Only 140 teachers provided usable returns. Thus the final sample that actually provided the data for the analysis, was of 140 teachers. This final sample of 140 teachers consisted of 80 male teachers and 60 female teachers. Out of these 140 teachers 41 were primary school teachers, 62 secondary school teachers, and 37 university teachers. In the sample 44 teachers were in the 49-60 age-group, 45 in the 37-48 age-group and 51 in the 25-36 age-group.

To determine the level of the overall role conflict scores of the sample subjects, Role conflict opinionnaire was devised by the investigator. The opinionnaire contains 24 items and is a 5-point likert type scale. It covers six potential role conflict areas. These are : Role Diffuseness Conflict, Role Vulnerability Conflict, Marginal Role Conflict, Role Commitment-career Orientation Conflict, Values Conflict and Institutional Conflict.

Role diffuseness conflict is the conflict arising from the lack of knowledge of goal achievement. Role Vulnerability conflict is the conflict resulting from the lack of clear definition of teacher's role. Marginal role conflict arises from the lack of proper significance of teacher's role. Role commitment-career orientation conflict results from the lack of opportunities for promotion. Values conflict arises from the lack of needed changes in the moral and ethical expectations from the teacher. Institutional conflict is the conflict resulting from the lack of control over the institution in which the role is being performed.

The split half reliability coefficient for the role conflict opinionnaire was found to be .74. The reliability coefficients for dimensional scores were .72, .64, .73, .70, .83 and .81.

Since personal meetings with teachers gives an opportunity for the teachers to raise queries regarding the items in the opinionnaire and to ask for any clarification, it was felt that the best method of administering the opinionnaire was in personal meetings with the teachers. So the investigator met the sample teachers personally and requested them to complete the opinionnaire individually and not to discuss the issues arising until they had all made their responses. The sum of the scores on all the 24 items of the opinionnaire was taken as a measure of the overall role conflict score for each respondent.

For the purpose of comparison between the various groups of teachers, the overall role conflict scores were dichotomized on a high-low classification and then the chi-square test was applied to determine the significance of the differences. The purpose here was to reveal the relationships between the various groups of teachers and the overall levels of conflict broadly defined in terms of 'high' and 'low'. Comparison groups were formed on the basis of sex, age and teaching level variables. While dichotomizing the teachers on a high-low role conflict classification, the overall scores of 24-72 were identified as low conflict cases and the overall scores of 73-120 were identified as high conflict cases.

Results

The results of the chi-square test analysis are presented in the following tables

TABLE 1
Chi-square Test for Sex and Conflict Variable

	Male Teachers	Female Teachers
High Role Conflict	64 (80%)	38 (63%)
Low Role Conflict	16 (20%)	22 (37%)

Chi-square = 4.82
(df=1)

Significant at
.05 level

TABLE 2
Chi-square Test for Age and Conflict Variable

	25-36 Age Group		37-48 Age Group		49-60 Age Group	
High Role Conflict	34	(67%)	39	(87%)	29	(66%)
Low Role Conflict	17	(33%)	6	(13%)	15	(34%)

Chi-square = 5.99
(df=2)

Significant at
.05 level

TABLE 3
Chi-square Test for Teaching Level and Conflict Variable

	Primary Teachers	Secondary Teachers	University Teachers
High Role Conflict	24 (59%)	53 (85%)	25 (68%)
Low Role Conflict	17 (41%)	9 (15%)	12 (32%)

Chi-square = 10.21 (df=2)

Significant at .01 level

Discussion

Teacher Role Conflict and Sex

Table 1 indicates that the chi-square value for sex and teacher role conflict level associationship is 4.82 (df=1) which is significant at .05 level only. This significant chi-square value clearly says that sex and teacher role conflict variables are significantly related to one another. From Table 1 it is also evident that male teachers are associated with significantly high level of role conflict (80 per cent score high compared with 63 per cent of female teachers). These data clearly indicate that male teachers are more associated with high role conflict than female teachers. This finding may be associated with lower level of tolerance and with higher level of achievement orientation of male teachers in comparison with female teachers. This finding is in tune with the earlier studies conducted abroad. Getzils and Guba (1955), while reporting significantly higher scores for men teachers in comparison with women teachers, defended their results by stating that teaching is a respected occupation often representing a top level goal for women and since it is not likely that they could do better professionally elsewhere, they can be more tolerant of the inconsistencies in expectations. During the course of interviews, Grace (1972) also found that "women teachers, while recognizing the existence of certain incompatibilities in the teaching situation, generally maintained a tolerant attitude towards them. These interviews involved few of the expressions of annoyance, suggestions for reform or detailed criticisms which emanated from the men". Kahn et. al. (1964) have also commented that an individual who is strongly achievement oriented exhibits a high degree of personal involvement with his job and the adverse effects of role conflict are more pronounced for him...."

Teacher Role Conflict and Age

From Table 2 it is evident that the chi-square value for age and teacher role conflict associationship is 5.99 (df=2) which is significant only at .05 level. This significant chi-square value reveals the fact that age and teacher role conflict variables are closely associated with one another. A perusal of Table 2 indicates that 37-48 age-group teachers are associated with significantly higher levels of role conflict (87 per cent score high compared with 67 per cent of 25-36 age-group and 66 per cent of 49-60 age-group teachers) The fact that middle-aged teachers perceived and experienced significantly more conflict than younger and older teachers raised some interesting questions. Since age is conditioned with experience, the higher role conflict of middle-aged teachers may be explained in terms of length of exposures to problem situations in teaching From the findings of this study it can be argued that middle-aged teachers are more likely to perceive high role conflict than younger teachers because of their longer length of exposurers. But this argument cannot be made in the case of middle-aged and older teachers, where middle-aged teachers perceived more conflict than older teachers. It seems probable that while perception of conflict increased with age/experience, teachers in the last phase of their teaching employment adapt themselves for their occupational survival. And thus they kept little concern about the problem situations in teaching

Teacher Role Conflict and Level of Teaching

From Table 3 it can be read that the chi-square value for level of teaching and teacher role conflict variables associationship is 10.21 (df=2) which is significant at .01 level From this highly significant chi-square value it can be inferred that these two variables are associated with each other. Table 3 also reveals that 59 per cent primary teachers, 85 per cent secondary teachers, and 68 per cent university teachers are in high role conflict groups Thus the secondary schools emerged as a more conflict-prone environment than either the primary school or the university. Teachers in secondary schools perceived significantly more role conflict than did their colleagues in primary schools and universities This finding may be attributed to the view that secondary teachers perceive that institutional arrangements, and the general way in which they are treated in the society, do not accord with their desired professional status and self-image. Primary teachers, in general, accept their ill-fate and do not react to problem situations adversely The concern of teachers about their professional status has been widely commented upon in Britain and America and research has shown that certain categories of teachers are subject to status-anxiety

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Assessment of the Cognitive Development of Gond Children and Adolescents

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The major purpose of this investigation was to ascertain the level of cognitive development of Gond children and adolescents. The study reveals that the total school curriculum is beyond the cognition level of the sample group. In order to make them interested in the school and learning, the experiences provided should be mediated through hands on activities

Emphasis on 'Cognition' implies that the primary purpose of school is to develop thinking abilities in the pupils. "The development of a person's cognitive ability is of real relevance to that individual." To meet this need, then, the nurture of the cognitive abilities of the pupils would be useful Hence, their assessment becomes equally important in determining the level of cognitive development of school-going children and adolescents. Researches have suggested that seriation, one-to-one correspondence, spatial and temporal relations, classification, conservation transitivity, class inclusion and number abilities are involved in reading and transacting the science and mathematics school course-contents According to the Piagetian theory of development of intelligence, seven-year-old children begin to utilize logical thinking abilities in interacting with the events, objects and peers and persons. Anamolous growth in the development of the substance-volume tasks has been observed in the Gond Ss (Pachaury, 1991a,b). The major purpose of this investigation was to ascertain the level of cognitive development of the Gond children and adolescents measures by the conservation tasks of number, length, space, continuous and discontinuous quantities and class inclusion.

Sample

Betul district of the Madhya Pradesh State is predominently inhabited by the Gond tribals. In order to obtain a representative sample of the Gond Ss, a Government Middle School was selected for data collection. This school is located about seven kms inside the Chicholi block of the Betul district. The subjects lived in single-unit hutments with their parents All the Ss were ill-fed and were very poorly clad with worn-out/torn rags. Distribution of the mid-day meal by the school sustained their retention in the school at least till the half-time as revealed by the headmaster. The accompanying table provides the age-range and gender of the Ss who formed the sample of the study

TABLE 1

7-8 yrs		9-10 yrs		11-12 yrs		13-14 yrs		15-16 yrs		Total
M	F	M	F	M	F	M	F	M	F	
5	5	2	5	3	5	5	5	6	4	45

Data Collection

Data were collected by the author through a structured interview schedule A fixed order task sequence was maintained for each subject (Table 2) Details of the tasks used in this study are available elsewhere (Bybee and Sund, 1982)

Results and Discussion

TABLE 2
Percentage of Gond Children and Adolescents Who Attained Different Conservation

Con-tasks	7-8 yrs		9-10 yrs		11-12 yrs		13-14 yrs		15-16 yrs	
	M	F	M	F	M	F	M	F	M	F
Number	-	40	-	60	-	-	-	60	-	50
Length	-	20	-	40	-	-	-	-	17	-
Contd-Qnty	20	60	-	40	-	-	20	40	67	25
Area	40	40	-	40	67	80	80	80	85	100
Discont-Qnty	40	20	-	40	-	-	40	-	67	25
Class inclusion	-	-	-	-	-	-	-	-	17	

Table 2 presents percentages of conserves for different concepts in the Gond children and adolescents. Except the class inclusion task, all the other conservation tasks used in this study are mastered by the children around the age of seven years (Bybee and Sund, 1982, p.102). Using Piaget's criterion of 75 per cent as an index of conservation development, except for the 'Space task', all the children and adolescents of the sample are non-conservers. However, even on this task delay of at least four years is inferred The table also reveals that 11-12-year-olds of the sample have performed very poorly on all the task as compared with their younger as well as older peers. A class inclusion task is attained around nine-years of age. The Gond Ss have failed on it totally. The task has been beyond their linguistic comprehension since it needs storing and processing of supper and subordinate semantic information simultaneously by the individual. A space-task is based on the conservation of area, therefore, it is well within their direct experience of working in the fields. Conservation of number, continuous length and quantity, discontinuous quantity and class inclusion tasks hinge on their alien cultural experiences, hence, they failed to conserve them Performance of the male subjects has been unusually poor. This empirical observation is contrary to research findings reported in the literature Attending to spatial cues seems to be the chief cause of their non-conservation responses on these tasks. School learning is mainly transacted through figurative experiences. Disadvantaged Ss are unable to construct logical schemes from them Thus, the total school curriculum is beyond their cognition function level and, therefore, they have to reconcile to the 'disinterestedness in the school and learning' Schooling for majority of the Ss of these categories deliberately forces them to follow a middle-class syllabus, which is very heavily loaded with higher-order cognitive functioning (Pachaury, 1989). Hence, these Ss' 'action skills' [life-style] come in direct conflict with the schooling School reinforces recognitive and evocate memories only. School experiences should be mediated through hands-on activities (see reference notes), because the activities would provide stimulation for the reconstructive memory, 'which relates actions, schemes or operations that bear on the problem' (Piaget and Inheldr, 1973)

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Creativity in Children : The Impact of School and Home Environment

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Creativity is a unique mental process that operates on a body of knowledge in a way that develops a novel end-product. Creativity is a natural endowment to the human being which, if fostered, developed and effectively utilized, can take the form of new approaches to traditional problems or contribute to genuine innovation and change in a product, process or technique. This study concludes that home and school environment plays a very crucial role in developing creative abilities in children

Societies develop in proportion to the skills they foster of creating novel and constructive ideas in children. Creativity is a special mental process through which an individual perceives the world in unique ways and organizes the events of the world experiences in an unusual manner which has meaning and sense. Thus, creativity can be described as a unique mental process that operates on a body of knowledge in a way that develops a novel end-product. Some children are born with exceptional potentiality for creativity, others if given proper environment can develop it. For both the types of children, conducive and supportive home and school environment would be an important factor. Either inborn capacity or environmental factors make children differ in the extent of originality and also in the areas of their expressions Studies have shown that the amount of intellect one is born with, the interests and encouragement play a crucial role in its development. If educational institutions do or do not provide opportunity, it may make difference. Similarly, parental attitude and other home-related factors may also be associated with creative talents in children. Thus, it is worth an attempt to explore the creative abilities in children brought up in differential home, school and socio-cultural environment.

Methodology

A sample of 144 respondents in the age-group of 10 to 12 years with an equal number of boys and girls was selected randomly from the schools of Hissar district. Two schools were from villages Sarasana and Bandahedi and two from Hissar city The Baquer Mehdi (1985) test of creative thinking which claims to measure the ability to deal with figural content in a creative manner was used The test has four parts e.g. elaboration verbal and non-verbal; originality-verbal and non-verbal. The SES scale of Kulshreshtha (1980) was used for assessing the SES of the respondents' family Home Environment Inventory was used for assessing the home environment and School Observation Inventory for assessing the level of school performance. The data were collected in December, 1990.

Results and Discussion

The four schools selected were first compared on the basis of physical facilities, curricular and co-curricular activities and teacher behaviour The physical facilities included black-boards, furniture, adequacy of rooms and space, ventilation, illumination, books, charts, etc. The second part comprised of morning assembly time activities, teaching methods and participation in other co-curricular activities, educational tours or visits, etc. Teachers' behaviour was rated on individual attention paid by them, application of encouragement, constructive criticism and wider knowledge; providing opportunity to express, utilizing novel ideas, taking interest in teaching and students, observing regularity, punctuality and appropriateness of punishment methods, etc.

Levels of Schools

On the basis of the scores obtained by the schools we could easily classify urban and rural schools as advantaged and disadvantaged schools (Table 1). The scores of both the urban and rural schools are similar. For further analysis, the scores of two schools of each type were combined

TABLE 1

Levels of Schools on the Basis of Physical Facilities, School Activities and Teacher's Behaviour

Sr. No		School			
		Urban		*Rural*	
		1	2	1	2
1.	Physical conditions	27	26	21	21
2	Other school activities	26	12	00	00
3.	Teacher's behaviour	155	149	68	66

Creativity in Advantaged and Disadvantaged Schools

Table 2 enlists the mean scores of the respondents from advantaged and disadvantaged schools on all the four parts of the creativity test.

TABLE 2
Mean Scores on Creativity in Advantaged and Disadvantaged Schools

Creativity components		Advantaged schools	Disadvantaged schools	t-ratio
1.	Elaborate (Non-verbal)	55.01	28.69	11.00**
2	Elaborate (verbal)	39.47	19.01	8.48**
3	Originality (Non-verbal)	49.41	21.48	7.23**
4	Originality (Verbal)	35.01	18.66	9.26**

** Significant at 0.01 level

It is evident from the above table that the children of urban schools have scored higher on all the four aspects of creativity than their rural counterparts.

Thus, it is clear that the type of physical facilities, school activities and teacher's behaviour towards the children have a positive effect on the development of the children. The more conducive the school environment, the better is the performance of the children on creativity.

Home Environment and Creativity

The inventory measured the quality of home environment on the dimensions like acceptance-rejection, reward-punishment, permissiveness-control, socialization-social isolation. The highest possible score was 102 and the lowest 34. Table 3 shows the extent of relationship between creativity and home environment.

TABLE 3
Correlation Between Home Environment and Creativity

Sample	Elaboration (Non verbal)	Elaboration (Verbal)	Originality (Non-verbal)	Originality (Verbal)
Boys	.525**	.344**	.511**	.411**
Girls	.524**	.518**	.509**	.523**

** Significant at .01 level

It is obvious from the above table that there exists significant positive correlation between creativity and home environment. The children belonging to families where atmosphere is that of acceptance, reward, permissiveness, and socially facilitation, will have higher creative abilities. Louisa Russell (1967) reported that as mothers increased in flexibility and acceptance their children would increase in creative thinking.

Socio-economic Status and Creativity

The environment of the home is built by the members who come in contact with the children. They themselves are the product of the interplay of various factors. Education, income, caste, family, material possession, etc. play an important role in determining the level of interaction with the children. The SES scores which are composite scores of various components of the socio-economic scale (Kulshrestha, 1980) are an indicator of the socio-economic status of the respondents. Table 4 shows the extent of correlation between creativity and SES.

TABLE 4
Correlation Between Socio-economic Status and Creativity Scores

Sample	Elaboration (Non-verbal)	Elaboration (Verbal)	Originality (Non-verbal)	Originality (Verbal)
Boys	.550** Marked	352** Low	596** Marked	396** Low
Girls	701** High	554** Marked	674** Marked	597** Marked

The above table shows that the correlation tried in two samples is significant on all the four components of creativity, ranging from .352 to .701, i.e. low to high. Thus, it is clear that there exists significant and positive correlation between creativity and socio-economic status. The higher the socio-economic status of the family, the better will be the creative potentiality in children. Vijaylakshmi (1980) observed that high creatives were found to come from high socio-economic status. Singh (1981) also found that socio-economic status has a significant impact on the creative thinking abilities of the children, favouring advantaged and average classes

CONCLUSION

Thus, it can be concluded that home and schools environment play a very crucial role in developing creative abilities in the children. Creative thinking abilities, so important in the mental development of the children and the technological and economic development of a nation, should be enhanced in children especially those belonging to low socio-economic status and also those who are deprived of various essential opportunities. The school teachers are to be trained and the parents to be guided in a proper way.

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Academic Achievement of Scheduled Tribe Adolescents in Salem District of Tamil Nadu : A Psycho-Socio Study

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The Constitution of India prescribes certain safeguards to uplift the tribals. There are programmes of the central and state governments to extend financial assistance for ST's for obtaining education right from the primary stage. Despite all, their enrolment and academic achievement in educational institutions at different levels are not quite satisfactory. The purpose of this investigation was to find out the effect of psycho-socio factors on the academic achievement of the ST adolescents. One hundred and five ST and 60 non-ST adolescents studying in VIII, IX and X standard were included in the study. The findings reveal that ST adolescents have got well-knitted personality traits along with higher occupational aspiration Furthermore, these adolescents have got a healthy social attitude.

THE largest concentration of tribal people anywhere in the world except perhaps Africa is in India. According to the census of 1981, the total population of scheduled tribes in India is 38, 015, 612 i.e. 6.93 per cent of the total population of the country (Manjukumar, 1982). The people of India include a very large number of primitive tribes who subsist on hunting, fishing or by simple forms of agriculture. These people are generally found in three regions of the country. In the north-eastern region—west Begnal, Assam, Bihar and Orissa—the tribals like Grusang, Limbu, Aaka, Abor, Miri, Mismi, Songfo, Mikir, Rabha, Kachari, Garo, Khasi Nagar, Kuki and Chakma are found. In the central region-Madhya Pradesh, Gujarat, Rajasthan and Maharastra triblas like Santhals, Munda, Ho, Oraon, Bhumji, Bhuia, Juang, Kandh, Baiga, Bhil and Koli are marked. The southern region—Andhra Pradesh, Karnataka, Kerala and Tamil Nadu—is inhabited by tribals like Chenchu, Kota, Badaga, Kadar, Muthuwan, Urali, Kannikar and Malayali.

In Tamil Nadu the tribes of Salem district are called Malayali. The Malayalis or Malaialis are dwelling on the summits and slopes of the shevaroy hills. The word Malaialis means inhabitant of the hills. The Malaialis are not like other tribes but they are considered as hill tirbes who speak Tamil. They migrated from the plains to the hills in the 16th century. They are also called Malayali Goundan. Their main occupationis cultivation of the lands. The Malayalis themselves do the puja to gods. They worship Mariamma, Draupadi and many other village goddesses. The Malayali houses are built of tattis(mats) of split bamboo and roofed with jungle grass. Their culture is unique and they lack in education.

Significance of the Study

The Constitution of India prescribes certain safeguards to uplift the tribals. The objective of such safeguards is to promote the educational and economic status of the tribals. The government have been launching various schemes to motivate the tribals to use education. There are programmes of the central and state governments to extend financial assistance for obtaining education right from the primary to the university stage. Special programmes for the tribals provide free supply of school uniform, slates, books, note-books, etc. to primary school students; mid-day meal; payment of term and other compulsory fees to secondary students; reservation of seats in institutions of higher and technical education. Despite all, their enrolment in educational institutions at different levels is not satisfactory. Even among those who have been enrolled in institutions, academic attainment is not encouraging. Psychological and sociological factors may hinder the attainment of the tribal pupils.

Adolescence is an important stage in the development of the personality of an individual A major problem confronting the educational administrators as well as parents is the personality development of the adolescents The environment which they live, aspiration, intelligence and personality of the adolescents greatly influence the academic achievement of the scheduled tribe adolescents Thus the investigator wanted to know the effect of psycho-socio factors on the academic achievement of the scheduled tribe adolescents.

Objectives of the Study

The objectives formulated for the study were :

1. To study the level of psychological factors
   (a) Personality
   (b) Occupational aspiration
   (c) Intelligence of the scheduled tribe adolescents studying in high/ higher secondary schools.
2. To study the level of sociological factors
   (a) Socio-economic status
   (b) Social attitude of scheduled-tribe adolescents studying in high/ higher secondary schools
3. To study the effect of psychological and sociological factors on the academic achievement of the scheduled tribe adolescents studying in high/higher secondary schools

Methodology

Sample

Two high schools and two higher secondary schools in Salem educational district were chosen for the present investigation. All the ST students studying in VIII, IX and X standards of the schools were included in the study. There were 105 ST students and 60 non-ST students.

Tools

The following tools were used for the collection of data for the present study :

1. Multi-dimensional personality inventory developed by Manju Rani Agarwal was used to measure the personality dimensions, viz., Introversion-Extroversion, self-concept, Independence-Dependence, Temperament, Adjustment and Anxiety.
2. Culture Fair Intelligence Test (Scale 2, form A) developed by Cattell and Cattell was used to measure the intelligence of the adolescents.
3. Occupational Aspiration Scale developed by Srivastava was used to measure the occupational aspiration of the adolescents.
4. A social attitude scale was developed for the study. It includes four dimensions, viz., attitude towards caste, culture religion and country. The content validity of the scale was established with the help of experts in the field of education. The items are validated by finding the correlation co-efficient between the total score and the item scores. The reliability of the scale was established by the test-retest method. Reliability co-efficienct was 0 79.
5. A common socio-economic status scale for urban and rural areas developed by Aaron, Marihal and Maletesha in Dharwar was employed to measure the socio-economic status of the adolescents.

Findings

Psychological Factors

(A) Personality factors

1. More non-ST adolescent boys and girls were extroverts than ST adolescents.
2. More ST adolescent boys and girls had high level of self-concept than their non-ST counterparts.
3. More ST adolescents were highly independent thatn non-ST adolescents.
4. More ST adolescents, both boys and girls, showed good adjustment than non-STs.
5. More ST adolescents, both boys and girls, showed good temperament than non-STs
6. More non-ST boys and girls showed high level of anxiety than ST adolescents.

(B) Occupational aspiration

7. More ST adolescent boys and girls exhibited high level of occupational aspiration than their counterparts.

(C) Intelligence

8. More non-ST adolescent boys and girls were having higher intelligence than ST adolescents. Difference between ST and non-ST adolescents in psychological factors.

9. (a) ST adolescents (M=46.52) were better in self-concept than non-ST adolescents (M=44.08)
   (b) ST male adolescents (M=46.15) were better in self-concept than non-ST males (M=42.30)
10. Non-ST female adolescents (M=42.85) were better in temperament than ST females (M=37.68)
11. (a) Non-ST adolescents (M=72.18) were more intelligent than STs (M=67.73)
    (b) Non-ST male (M=73.15) adolescents were more intelligent than ST males (M=68.45)

Sociological Factors

(A) SES

1. (a) More non-ST adolescents were in the higher SES group than STs
   (b) More non-ST male adolescents were in the higher SES group than ST males.
   (c) More ST adolescent girls were in the higher SES group than non-ST girls.

Social Attitude

2. More non-ST respondents showed favourable attitude towards caste than ST respondents
3. (a) More non-ST adolescent boys showed favourable attitude towards culture than STs.
   (b) More ST adolescent girls showed favourable attitude towards culture than their counterparts.
4. More ST adolescents showed favourable attitude towards religion than non-STs.
5. More non-ST adolescent boys and girls showed favourable attitude towards the country than STs
6. Social attitude includes attitude towards caste, culture, religion and country. According to the statistical analysis, more ST adolescents were having favourable social attitude than non-STs

Difference between ST and non-ST adolescents in sociological factors.

7. The attitude of ST male adolescents (M=23.78) was more favourable than that of their counterparts (M=21.47)
8. The attitude of the ST male adolescents (19.55) was more favourable than that of the non-STs (M=17.72)
9. The attitude of ST adolescents (M=23.83) towards religion was more favourable than non-STs (M=22.17)
10. The attitude of non-ST adolescents (M=22.25) towards the country was more favourable than ST adolescents (M=21.12).
11. Social attitude includes the attitude towards caste, culture, religion and country.
    (a) The attitude of non-ST adolescents (M=85.47) towards the society was more favourable than that of ST adolescents (M=82.62)

(b) The attitude of non-ST females (M=88) towards the society was more favourable than ST females (M=80.32)

Educational Factors

1. (a) More non-ST adolescents showed better academic achievement than STs.
   (b) More non-ST boys showed higher academic achievement than ST boys.
   (c) More non-ST Girls showed better academic achievement than ST girls.
   Difference between ST and non-ST adolescents in academic achievement
2. The academic achievement of non-ST females (M=42) was better than ST females (M=38)
3. There was significant relationship between academic achievement and attitude towards the caste of ST male adolescents.

Interpretation

Psychological Factors

Regarding personality factors, ST adolescents are better in self-concept, temperament, independency and adjustment than non-STs. This may be due to the efforts taken by the State and Central governments for the upliftment of ST pupils. Since they have high self-concept good temperament and adjustment could also be marked in them. This may lead them to develop high independency. More non-ST adolescents are extroverts than STs. This may be due to the fact that STs are isolated from other people. Since they have been segregated from the society for quite a long time, most of the ST adolescents are introverts

In comparing the occupational aspiration of ST and non-ST adolescents, STs show higher occupational aspiration than non-STs. This may be due to the fact that they are all first generation learners who have entered the portal of schools because of the efforts taken by the government by providing them the basic needs.

Regarding intelligence, non-ST adolescents are better than STs. This may be due to the deprivation prevailing among the aboriginals. The finding was also confirmed by Jensen (1967) who suggested that deprivation particularly affects children whose I.Q. lies below average. The result further corraborates the finding of Curry (1962) who suggested that children with superior intellectual endowment were in a better position to overcome deprived home condition than children with limited ability.

Sociological Factors

In comparison with ST and non-ST adolescents, most of the non-ST adolescents belong to the higher SES group. This may be due to the fact that the tribals are the prey to the evils of poverty, illiteracy and ignorance. Here, a striking feature is that most of the ST adolescent girls belong to the higher SES group than non-ST girls. This may be due to the fact that ST girls from the affluent family are sent to the schools and ST girls from the poor families are helping their parents at home.

In comparing ST and non-ST adolescents, STs show favourable attitude towards religion and culture. This may be due to the fact that tribal's political and social organisations are based on their religion. A common culture, resulting from a sense of unity, language, religion and political organisation, is found to exist in the tribes.

ST adolescents show unfavourable attitude towards caste and country. This may be due to the fact that they are having a long history of deprivation. Even though the government is giving special attention for the upliftment of the tribals in various ways, these adolescents expressed their attitude in the above manner. This is a problem which is to be further probed into.

Social attitude includes attitude towards caste, culture, religion and country. ST adolescents show favourable attitude towards culture and religion but they are showing unfavourable attitude towards caste and country. Anyhow the global picture shows that ST adolescents exhibit favourable attitude towards the society

Educational Factors

As regards academic achievement, non-STs are better than STs ST adolescents are far behind non-ST adolescents in academic achievement because they are all first generation learners which may hamper their learning

In general, from the study it could be concluded that ST adolescents have got well-knitted personality traits along with higher occupational aspiration At the same time poor achievement marked among them could be improved through compensatory coaching in the educational institutions Anyhow these adolescents have got a healthy social attitude

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Book Review

New Directions in Technical and Vocational Education, APIED, UNESCO, Bangkok, 1992, pp. 51

CONSIDERING the revolutionary nature of advanced technologies and their profound impact on industry, economy, employment, and education, the UNESCO considered it appropriate to bring out a monograph on "New Directions in Technical and Vocational Education". The monograph integrates the experience of the member countries in the region and provides the rationale behind them.

The preface of the monograph maintains that in its preparation due care has been exercised to correlate the innovations flowing from theory to practice and from practice to theory; to describe the contemporary trends, current practices and future directions; to provide the background settings and conceptual understandings; to sequence the contents for providing continuity of thought; and present the material in the form of a running commentary of the field situation across the region.

The monograph deals with growing technological innovations, consequential restructuring in industry, economy, occupational patterns, and job qualifications. It also discusses the reorganization taking place in technical and vocational education in terms of new programmes, retraining programmes, curriculum designs, training methodologies, learning materials, teacher prepraration, management and administration.

The monograph has eight chapters. The first chapter introduces the revolutionary changes that are bringing about radical restructuring and reorganization in industry and economy. The shift from 'muscle power' as a productive force to 'machine power' during the industrial revolution; and now a further shift from machine power to 'brain power' and 'mind skills' as essential programmable control devices has been aptly described as a shift from one age to another

Describing the present age as knowledge society, information age, mechatronics age, third wave, post-industrial society, post-business society or third industrial revolution, the monograph takes note of the great shift of value emphasis from 'materials' to 'information' and time.

The second chapter analyses the effect of these changes on the employment market In the present era which is poised to thrive on automation and information processing, human effort is required to come mostly from the mind in the form of innovative and intellectual skills Consequent to this new dimension, 'new priorities in curriculum planning and educational programmes' have been visualised in the third chapter Some of the priorities are multi-skilling involving higher order cognitive skills, practical skills, programming skills, decision-making skills, communication and inter-personal skills; flexibility, retrainability, entrepreneurship, credit transfer and continuing education

The monograph advocates for industry and institute-linked training systems in chapter four, followed by discussion of emerging trends in student-centred and resource-based learning in chapter five The focus of chapter six is on changing roles and functions of teachers while that of chapter seven is on bringing in professionalism in management and organization. Finally, in its concluding chapter, the monograph discusses problems, issues and future directions

On the whole it is a useful and informative document for educational planners, in general, and technical vocational education persons, in particular The new directions given in the monograph, in fact, call for a complete over-haul of the content and process of education if our society has to take a quantum leap by the turn of the century

M Sen Gupta

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